MA LIGHTING

grandMA

User's Manual

Version 3.0

CE

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➡ see

Important!
Attention!

Information
Note

1 Introduction

1.1 General Information

Combining an approved concept of operation, an outstanding product design and first-class quality with a bundle of new ideas and top technology, this new board opens the door to a fascinating world of new dimensions, offering the opportunity to gain perfect control on extended lighting shows involving lots of channels and intelligent fixtures.

MA users will feel very familiar with *grandMA* from the very beginning. The basic operation modes, well known from the Scancommander, proved to be the perfect tools to control intelligent fixtures and are now the leading standard of the industry. Of course, there have been quite a few improvements as controlling hundreds of channels asks for intelligent solutions on time consuming operations, but essentially, the *grandMA* is still an MA console – easy to operate, yet very powerful.

1.1.1 Displays

The first remarkable features of the *grandMA* are the contrast-rich, full color TFT touch screens integrated into a panel with adjustable viewing angle. Optionally supported by two external monitors they allow for perfect control and multiple visualisation of group and preset operations, interactive output displays and different ways of cue listing.
Colors and gobos can directly be selected by labeled preset buttons and allow for a fast and accurate control, while the encoders can be used anytime for the fine tuning. By way of presets, stored positions can quickly be adjusted to changed arrangements.

1.1.2 Motorfaders

How can a console like the *grandMA* with just 20 faders (10 on the *grandMA light*) possibly claim to control 4000 channels? It's not a trick, it's motorised faders. They automatically capture the actual values as soon as you switch over from one program library to another. Further special features are explained in the respective chapters following.

1.1.3 Programming features and data input

At first, the flexibility of the *grandMA* may surprise, but you have always the choice to do it "the old fashion way". Dealing with huge amounts of data will make you want to use improved ways of programming and even an automatic effect synthesizer.

1.1.4 Flexible Setup configuration

Despite the *grandMA*'s high flexibility, you will never lose direct access and control. View Macro buttons allow to visualise current information at anytime. Standard displays for typical Live Event, Theatre, synchronised playback or Discotheque applications are some of the settings you can start from.

1.1.5 Hardware and Interfaces

The built-in Hard Disk Drive offers virtually unlimited storage capacity. The built-in flashdisk (not on the ultra-light, on which the software is on the HDD) contains the board's software and makes the *grandMA* independent from any external PC.

1.2 General Comments

This manual describes the complex possibilities th*at* the *gra*nd*MA* has in store for you. Step by step, you will be guided through the logical aspects of working with this console.
You will soon find out, that operating the *grandMA* is relatively simple in view of the vast variety of features and options available. Once you are familiar with the basics, you will realise that you can easily go ahead and try out new possibilities, as all procedures and operation modes are clearly structured.

Consequently, this manual starts with a general introduction, followed by basic settings within the Setup menu, such as selecting fixtures and dimmer channels with DMX address, modifications, etc.

Chapter 3 is dedicated to the practical aspects of setting up a Show, while Chapter 4 will show you how to create and edit Cues and Sequences. Moving on to Chapter 5, you will learn how to execute Cues, Sequences and Chasers. In Chapter 6, you will learn how to create, save and execute effects. Chapter 7 is dedicated to the Remote Control (abbreviated as "Remote") and Timecode, while Chapter 8 explains the function of Macros and the Quikey. Chapter 9 deals with the Command Line. Saving and loading your show is described in chapter 10. Chapter 11 explains the updating of the operational software as well as the fixture library, while chapter 13 is dedicated to the operation of the grandMA replay unit. Chapter 14 deals with True Tracking Backup and Playback Functions and chapter 15 provides a listing of all fixtures currently available in the library.

We are convinced that you will enjoy working with the *grandMA* and we wish you every success for your Shows!

1.3 Specifications

1.3.1 Capacities

- 2048 control channels (HTP or LTP) with 8 or 16 bit resolution, (optional) also available with 4096 channels (on the ultra-light, only 1024 channels are possible)
- Virtually unlimited number of presets, memories, cue lists and effects

1.3.2 Ergonomics

- full colour TFT touch screens with a wide angle of view and 2 external (one on the ultra-light) monitors (optional)
- encoders for display setting, 5 master encoders for data entry
- 20 (10) motor faders and extra silent GO+ and GO– Buttons (10 non-motorized Faders on the ultra-light)
- Numeric keypad plus standard keyboard and mouse (only with *grandMA*)
- Trackball

1.3.3 General user functions

- Permanent access to single units or groups
- Fixture library with update option via Internet
- Selective programming for free combination of memories and effects
- Free switching between stage-orientated movements and DMX control (not in version 3.0)

1.3.4 Hardware

- Notebook Hard Disk Drive and 3,5" Floppy Drive
- 12 MB flash memory for self-contained operating system (not on the ultra-light)
- Protection against radio interference (CE-Norm)
- Inputs: MIDI, Sound, Remote Go, SMPTE, Analogue (+10 V), DMX 512
- Output: 4 Times DMX 512 (2 on the ultra-light), MIDI, Printer, Ethernet
- Full tracking backup and sync mode with second unit

1.3.5 Dimensions and Weight

***grandMA*:**

- Width 48", height 6", depth 26" (1200 x 150 x 670 mm)
- Weight 104 lb. (47 kg) without flightcase

***grandMA light*:**

- Width 29", height 5", depth 20" (730 x 120 x 510 mm)
- Weight 46 lb. (21 kg) without flightcase

***grandMA* ultra-light:**

- Width 635mm, Height 157mm, Depth 490mm
- Weight 12.8 kg without flightcase

***grandMA* replay unit** ➡ **13** Layout and Controls *grandMA* replay unit

1.4 Installation

90–230 Volt, 40–60 Hz via Euro plug. No switching of voltage necessary.

DMX output: Complies with USITT DMX 512 (1990) protocol. The output is opto-insulated and exceeding RS 485 or RS 422. The pins in the 5 pin XLR plug are: Pin 1: ground, Pin 2: Data–, Pin 3: Data+ (pins 4 and 5: not used)

1.5 Safety Requirements (Important, read carefully!)

1.5.1 Touchscreen

Never use any sharp items when operating the touchscreens! Deep scratches will damage the screen. During operation it might happen that due to temperature fluctuations the calibration of the touchscreens will change, so that a new adjustment will be necessary. ➡ **2.13** Settings in the Setup Menu (point 1)

1.5.2 Sockets for keyboard and mouse

These sockets are located on the back side of the unit and are very delicate; especially during transport, take care that these parts are not exposed to mechanic stress.

1.5.3 Transportation/Case

During transport, take care that the touchscreens are not exposed to mechanical stress. Flightcases not provided by MA Lighting have to be designed in a way that **under no circumstances** pressure can be exerted on the TFT displays.

1.5.4 Panel (*grandMA* only)

If the mechanical parts of the display panel have not been moved for a while (about one day), it might occur that you will feel a stronger resistance when starting to change the angle. This is just normal and related to the mechanics.

1.5.5 Battery (not on the ultra-light)

In case of power failure, the console offers (with fully charged battery) an emergency backup of at least 10 minutes. In case of a longer power failure, the console will automatically switch off after approximately another 3 minutes or another 12 minutes when pressing CONTINUE. If **this case occurs**, the console will **automatically save all data**.

When switching off the unit via **built-in power switch**, all data of the current show are saved automatically.

In case of an automatic switch-off after power failure (described above), the unit must be running again for **at least** 10 minutes, in order to guarantee a proper SAVE procedure the next time the unit is switched off. **By ignoring this advice the harddisk will be damaged.**

The battery needs approximately 4–8 hours for a full recharge. Only then the battery is able again to bridge another power failure of up to 10 minutes.

According to manufacturer provisions, the battery has to be changed **after 5 years at latest**. Please attach a label on the unit, indicating the date of purchase, preferably update data etc. (choose a location, where this information can easily be seen). (This manual was printed in the year 2001.)

1.5.6 Harddisk

During operation, do not push or knock the unit.

Although the built-in notebook harddisk is secured by a rubber-upholstery, mechanical stress can still damage the unit and lead to e.g. a complete loss of data.

1.5.7 Housing

- Do not block or cover the ventilation. On hot summer days, the lid (*grandMA* only) should be at least 5 cm open to ensure sufficient ventilation.
- Do not place any drinks on the unit.
- Do not use force when adjusting the viewing angle of the display panel (*grandMA* only).

1.6 General Safety Instructions

1. Read all the instructions in the user's manual, especially the safety requirements ➡ **1.5** Safety requirements
2. Follow all instructions. Keep the user's manual for later use.
3. Follow all cautions and warnings indicated on the unit.
4. Pull the mains plug before cleaning the unit; don't use any liquid or spray cleanser. Clean with a dry cloth.
5. Do not use the unit near water. Do not expose it to a humid environment. Do not spill any liquid over the unit.
6. Unplug this apparatus during lightning storms or when unused for long periods of time.
7. Do not block or cover any ventilation slots in the housing - they guarantee the reliable functioning of the unit and protect it against overheating. Do not install the unit into a frame unless sufficient ventilation is guaranteed. Install in accordance with the manufacturer's instructions.
8. Do not insert any objects through the slots of the unit, as these could get in contact with live parts or could cause short circuits. This may cause fires and electric shocks.
9. Do not place the unit on unstable surfaces. It might fall down and get damaged.
10. The unit is provided with a safety plug. This plug can only be used with safety sockets. These precautions should by all means be followed. If the plug should not fit into a given socket (e.g. the case with old sockets), the socket should be replaced by an electrician.
11. Do not ignore the safety purpose of the grounding-type plug. A grounding type plug has two blades and a third grounding prong. The third prong is provided for your safety. If the provided plug does not fit into your outlet, consult an electrician for replacement of the obsolete outlet.
12. Do not place any objects on the power cord. Protect it from being walked on or pinched particularly at plugs and the point where they exit from the apparatus.
13. If using an extension cord, make sure the rated output of all units connected in aggregate does not exceed the maximum rated output of the extension cord. The rated output of the units plugged into the socket should in aggregate not exceed 10 amperes.
14. If the power cord or the mains plug is damaged, let a qualified technician replace it immediately.
15. Only use power cords which are marked as safety-proof.
16. Refer all servicing to qualified service personnel. Servicing is required when the apparatus has been damaged in any way, such as power-supply cord or plug is damaged, liquid has been spilled or objects have fallen into the apparatus, the apparatus has been exposed to rain or moisture, does not operate normally, or has been dropped. Besides others, you run the risk of suffering an electric shock.
17. All service work should be exclusively performed by qualified service technicians.
18. Do not use any high-power walkie-talkies or cellular phones near the unit.
19. If one of the following conditions occurs, **please pull the mains plug and call the customer service!**
    - Power cord or mains plug is damaged or worn.
    - Liquid penetrated into the unit.
    - The unit was exposed to rain or high ambient humidity.
    - The unit does not function properly, even when following all the instructions in the manual. Do only manipulate the controls mentioned in the instructions, as wrong settings on other controls may damage the unit; all too often, it is very time-consuming to have damaged parts repaired by a service technician.
    - The unit fell down and the housing was damaged.

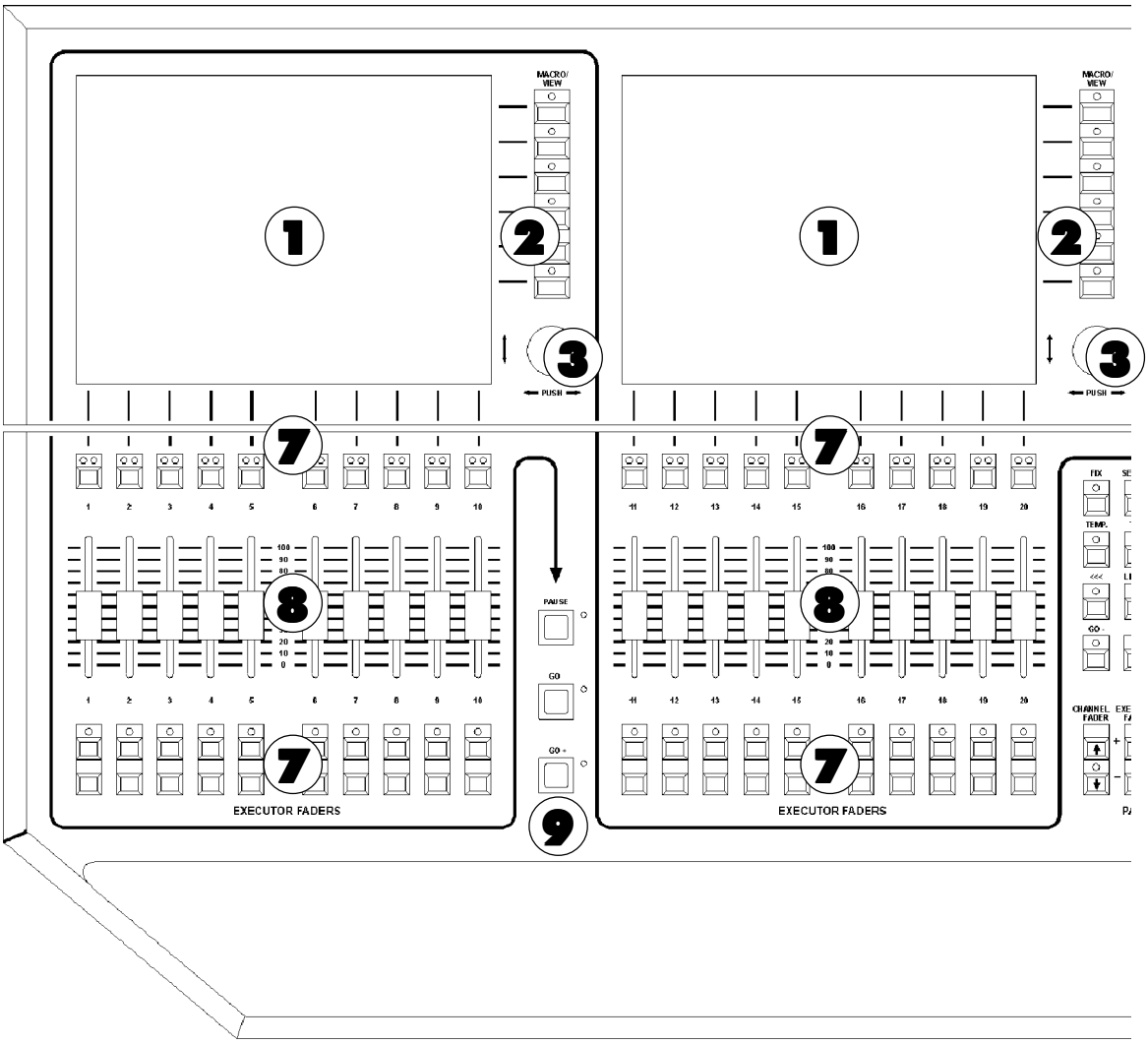
Please note that this console is based on complex software and as you probably know from computer experience, software crashes can occur on occasion. But be assured, that we will do our best to keep them rare exceptions.

Electric shock warning on the backside of the *grandMA*

The unit should be serviced by qualified personnel only, as live parts may be exposed when opening and/or removing coverings; besides others, you run the risk of suffering an electric shock.

1.7 Layout and Controls

1.7.1 Layout and Controls *grandMA*



1 **TFT-Display** with Touchscreen

2 **View / Macro buttons**

3 **Encoders** – To move/scroll the respective window contents

4 **Encoders** – To set the attribute values such as Gobo, Pan/Tilt, times etc.

5 **Manual Time Setting** for Presets

6 **Yellow Knob** - To adjust the Touchscreen Panel

7 **Playback buttons** – Can be defined e.g. as Go+, Go–, Pause, Flash etc.

8 **Executor faders** – Can be defined e.g. as Master, Swap Master, X-Fader etc.

9 **Go+, Go–, Pause buttons** – Only effective for the default sequences. Default sequences can be assigned to the buttons using the ***Select button*** (recognisable by the green title bar of the small EXECUTOR window above it).

10 **Select button**

11 **Buttons** – To directly process Go+, Go– etc. for any Executor, or to lock Executors

12 **Page change-over** – For Channel faders, Executor faders and Executor buttons

13 **Executor buttons** (see also ➡ ***Executor-Fader*** (8))

15 **Select –** Cues, Groups, Executors etc. in combination with numeric keypad

14 **Manual Timing** – Setting for Executor-Buttons

16 **Blind, Freeze, Clear buttons**

17 **Blackout button** for dimmer channels

18 **Grand Master** for Dimmers channels

19 **Numeric keypad**

20 **Intensity wheel**

21 **Cursor buttons** NEXT, PREV. Choosing Fixtures or Channels one by one within Groups.

22 **Trackball** for Pan / Tilt

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22
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MA LIGHTING
PUSH TO ERASE
PUSH
PUSH
FIX
OFF
TEMP
TOP
ON
GO -
GO +
CHANNEL FADER
EXECUTOR FADER
EXECUTOR BUTTON
PAGE
EXECUTOR BUTTONS
SET
MANUAL FADE
LIST
BLIND
CLEAR
VIEW
Effect
GOTO
PAGE
MACRO
PRESET
SEQUENCE
EXECUTOR
CHANNEL
FIXTURE
GROUP
ASSIGN
HELP
ALIGN
PREVIEW
OOPS
DELETE
COPY
MOVE
TIME
EDIT
UPDATE
TOOLS
SETUP
BACKUP
ESCAPE
STORE
HIGHLIGHT
FULL/OPEN
LEVEL
GRAND MASTER
7
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THRU
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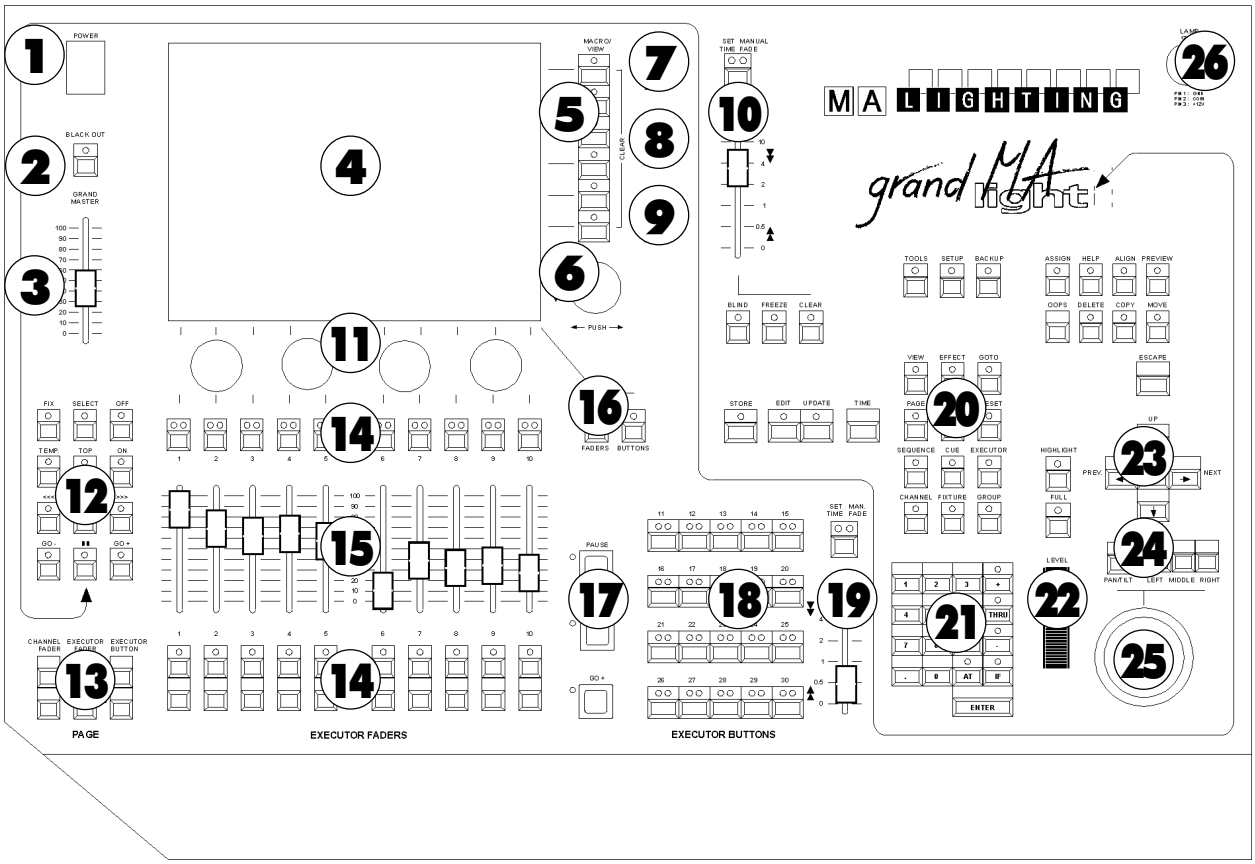
-
0
AT
IF
ENTER
UP
PREV
NEXT
DOWN
TRACKERBALL ON

1.7.2 Layout and Controls *grandMA light*



1.7.3 Layout and Controls *grandMA* ultra-light (similar to *grandMA* light picture)

Items **7** and **17** do not apply (buttons inexistent).
Item 22 (Wheel) does not apply, can be controlled by Trackball (item 25) and Wheel button (item 24).

1.7.4 Layout and Controls *grandMA* replay unit

➠ **Chapter 13**

1 **Power switch**

2 **Blackout button** for Dimmer channels

3 **Grand Master** for Dimmer channels

4 **TFT Display** with touch screen

5 **View / Macro buttons**

6 **Encoder** for moving / scrolling the respective window contents

7 **Viewpool button** for opening a selection with all created VIEWS on the display. These can be called up directly by selecting the respective ones.

8 **Background button** - If on the TFT display, Views are being overlayed by a menu (ASSIGN, EDIT, ...), you can use this button to bring up or hide the menu.

9 **Keyboard button** to bring up the Soft Keyboard on the TFT display.

10 **Manual setting of times** for Presets

11 **Encoder** for setting the attribute values (e.g. Gobo, Pan/Tilt, times, etc.)

12 **Buttons** to directly execute functions like Go+, Go-, etc. for arbitrary executors, locking executors, SELECT button

13 **Page flipping** for Channel fader, Executor fader and Executor buttons

14 **Playback buttons** can also be defined as e.g. Go, Go-, Pause, Flash, etc..

15 **Executor faders** can also be defined e.g. as Master, Swap Master, X-Fader, etc..

16 **List buttons**
Faders: will bring up small Executor windows for the EXECUTOR FADERS.
Buttons: will bring up small Executor windows for the EXECUTOR BUTTONS.

17 **Go+, Go–, Pause button** – Will only take effect for the default sequences. A default sequence can be assigned to buttons by using the ***Select button*** (indicated by the green title bar in the small EXECUTOR window displayed above.).

18 **Executor buttons** can also be defined as e.g. Go, Go-, Pause, Flash, etc..

19 **Manual setting of times** for Executor buttons

20 **Choosing** Groups, Executors, etc. in combination using the numeric keypad

21 **Numeric keypad**

22 **Intensity wheel**

23 **Cursor buttons** NEXT, PREV. Groupwise Calling up of scanner or dimmer channels one after the other.

24 **PAN / TILT button,** switching over of the trackball function for mouse function (LED off) or Pan / Tilt function (LED on)

Left / Middle / Right button for Mouse function

25 **Trackball** for Mouse or Pan / Tilt function

26 **Socket for console lamp** 12V/5W

1.7.5 *grandMA* light and ultra-light: Differences to the *grandMA*

The software for the *grandMA* light and ultra-light and the *grandMA* is nearly identical.

The product will not be delivered with a hardware keyboard and an external mouse. An additional external keyboard and a mouse, however, can be connected on the rear of the unit.
Using the KEYBOARD button on the TFT display, a Soft Keyboard can be brought up that can be operated via the touch screen. The Soft Keyboard will only appear, if entries are possible.

If the trackball is switched to mouse function (LED in the PAN / TILT button is off), you can perform mouse functions using the trackball or the LEFT-MIDDLE-RIGHT buttons.

1.7.6 General Operation

Touch screen

- Buttons can directly be selected.
- In charts, individual cells can be selected. By using the Lasso function on the touch screen, you can also select several cells.
- You can simultaneously select individual, but also several Fixtures or Channels by dragging the mouse on the touch screen.
- Directly activating title bars of windows or options for the individual window.

Encoder on the right of the Display

- In the active window, the focus (blue frame) or a highlighted cell (red background) can be moved upwards or downwards. If pressing the Encoder when turning it, you can move the focus to the left or to the right side.
- If a pulldown menu is opened, you can use the Encoder to scroll through the list. When you reach the desired value, you can select it by shortly pressing the Encoder.
- If in a chart, a cell is selected with a value or a time, you can open an entry window by shortly pressing the Encoder. In this window, you can also use the Encoder to adjust the value, pressing the Encoder again will accept the new value.
- If a Fixture or a Channel is selected (blue frame), you can open the options by shortly pressing the Encoder.

Encoder below the TFT Display

- To set the selected function (PAN/TILT, DIMMER, GOBO, etc.). If pressing the Encoder while turning it, you can change the Encoder's sensitivity.
- If more than one function is displayed above the encoder, you can switch between the various functions by short push on the encoder.

grandMA Hardware keyboard or *grandMA* light and ultra-light Soft (TOUCH) Keyboard

- Views, Groups, Presets, Sequences, Effect groups, Forms or even Macros can directly be named within the respective pool.
- Cue names can be adjusted in the EDIT menu, in the Tracking or EXECUTOR Sheet.

If the "Scroll Lock" function is activated, commands can only be entered directly into the Commandline (Scroll Lock LED on keyboard is lit). By pushing this button briefly, you can switch this function either ON or OFF.

grandMA Mouse or *grandMA* light and ultra-light-Trackball

The most effective way of working with the grandMA is to use the touchscreen and the encoders which are located next to the respective displays. The only means to change the size of windows, work within the Tracking Sheet or edit forms (**6.7.2** Modifying Forms), though, is the mouse.

With the left button:

- Buttons can directly be selected,
- Individual cells in charts can be selected,
- Several cells in charts can be selected simultaneously by clicking, holding and dragging them,
- Fixtures or Channels can be selected,
- Title bars of windows can be activated or options for the individual window can directly be called up.

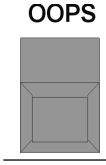
With the middle button:

- The values of selected Fixtures or Channels can be adjusted.

With the right button:

- The options for this window can be opened by clicking on the title bar,
- The options can be opened by clicking on an individual Fixture or Channel.

OOPS Function



By pressing the OOPS button, you can cancel (go back) up to 10 steps.

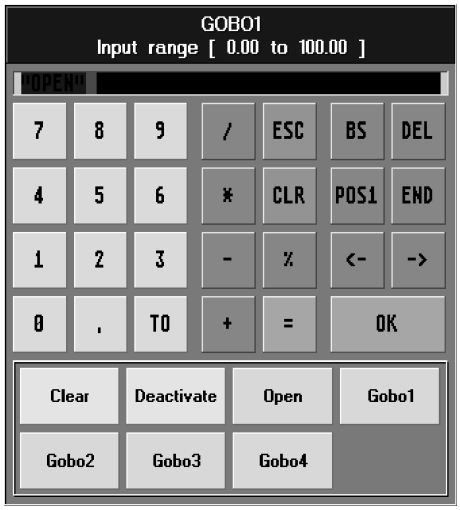
Holding the OOPS button opens a window showing the 10 last entries on the right TFT-display. Pressing the UNDO button will cancel the first entry on top of the list. ➡ **2.13.1** Optionen der OOPS-Funktion

Entry window/Calculator

In this window, you can enter values or times and recalculate them.
Presets can be called up for the selected Fixtures or Channels.

If in the Executor Sheet or in the EDIT menu, a trigger call or time is selected, you can open this window by pressing the Encoder on the right side of the Display.

If Fixtures or Channels are selected, this window can be opened by pressing the respective buttons for this function above the Encoder.


GOBO1
Input range [0.00 to 100.00]
"OPEN"
7 8 9 / ESC BS DEL
4 5 6 * CLR POS1 END
1 2 3 - % <- ->
0 . TO + = OK
Clear Deactivate Open Gobo1
Gobo2 Gobo3 Gobo4

The title bar of this window will display the selected function.

In the upper cell, the current value will be displayed.

Using the touch screen, the number pad or turning the encoder on the right of the display you can enter a different value or time, and accept it by pressing the OK button.

Left of the numbers, the following buttons are displayed: H (for hours), M (for minutes), S (for seconds) and F (for frames). With these buttons, you can directly enter times, if necessary.

or:

If a function is selected, buttons for Clear, Deactivate and the individual presets are displayed in the lower part. If you press CLEAR, the values of the selected Fixtures or Channels will be deleted. If you press DEACTIVATE, the active values of the selected Fixtures or Channels will be deleted.

If you select a Preset, it will be displayed in the upper bar, and you can select it pressing the OK button.
Entries can be deleted using the OOPS-button.

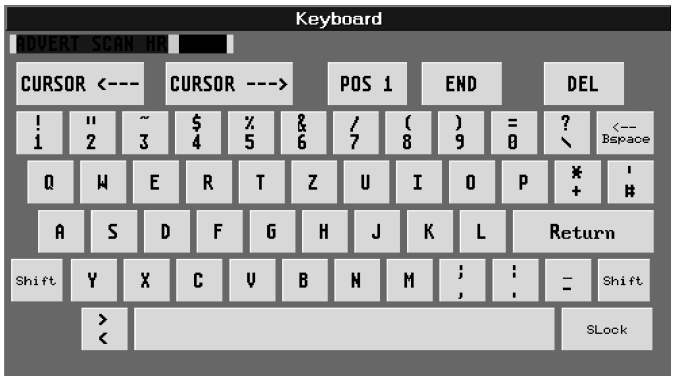
SOFT (TOUCH) Keyboard

On the *grandMA* light and ultra-light, you can call it up by pressing the KEYBOARD button.

In the upper right cell, the entered text will be displayed.

Using the touch screen, you can select individual buttons.

Pressing RETURN will accept your entry.



1.8 Quick Reference

After some years of experience we have lost our illusions about any user to be willing to read a complete manual before playing with a new toy. But there are some tips which may help you to find your way around.

1.8.1 Basics

The *grandMA* is a highly specialised computer with up to 6 monitors, and many functions will work as you may be used to from your PC or MAC.

Main supply: 90–230V

The mouse in its drawer (*grandMA* only) or track ball on the *grandMA light*:
- Left click selects a field for keyboard or encoder input, etc.
- Right click goes to Modify (opens windows with options, sorting columns by clicking on the headline...)
- Pressing and holding the middle mouse button changes output values (Hold and Move)

The displays (select one by a click into empty space)
The *grandMA* offers different windows: Menus with information and control buttons, spreadsheets, button groups, dimmer channel listings and fader symbols
- Left mouse click on the headline moves a window, the size is set on the left and lower boarders
- Right mouse click on the headline opens a window with different options

Spreadsheets (comparable to those used in Excel or Access):
- Holding left mouse button and moving the mouse, you can select a set of cells (not on all screens possible)
- Left click on a column headline will resize or move the column
- Right click on a column headline will sort by this column

Emergency help: Like any computer, the *grandMA* may crash. If nothing helps:
1. Perform a reset (by pressing CTRL-ALT-DEL or the RESET button on the backside of the unit).

Only if this doesn't help:
2. During the booting of the unit, use the red "Utility menu" to delete the current Show. ➠ **12** Utility Menu

In case of any further problem, please feel free to contact our HOTLINE +49 - 5251-688865-99.

1.8.2 Setup and start

The easiest way is to use the BACKUP button and load a demo-show or start-setup. Otherwise:

1. SETUP button: Will select and patch the number of dimmers and scanners, possibly create presets, group and effect buttons.

TIP By YES in the BTN column of the Fixture Schedule, the *grandMA* automatically generates a button for each fixture in the group window.

2. Right click into any empty display:
   - creates, moves and resizes a FADER or CHANNEL window for dimmer control and
   - FIXTURE, GROUP and different Preset windows (PAN/TILT, GOBO...) for scanners.

1.8.3 Direct access

The *grandMA* offers different ways of controlling dimmer values and scanner attributes. For a quick start, we give you only one example for each of them.

Setting values for dimmers:

CHANNEL FADER "–" or "+" button switches the motor fader to control single dimmer channels.
- "+" and "–" scrolls in blocks of 20 (10) dimmers.
- The set fader parameters are shown in the dimmer display.

TIP Channels can also be selected and modified by mouse, wheel, encoder ...

TIP With the LINK function (right on top of display), the window will automatically scroll to show the channels set for the faders.

Controlling Fixture attributes:

GROUP window
Select a fixture by its button (or click on the name of a fixture in the output window).

GOBO, COLOUR ... window
Open a preset for the selected unit (if no presets are displayed, run the selected function via an encoder).

TIP 1 Pressing and turning the encoder allows for the fine tuning.

TIP2 If more than one function per encoder is displayed, push the encoder to switch over.

1.8.4 Saving Settings

The STORE button of the *grandMA* is very flexible and direct.

TIP Attention: If the STORE button is flashing, switch off with a second press or use ESCAPE.

Example: Selecting some fixtures and setting the color wheel

- STORE + button of an EXECUTOR (make sure you switched back from CHANNEL to EXECUTOR): Saves the color setting as a cue for the selected Executor.
- STORE + button of an EXECUTOR, where a cue was already saved, offers the option to overwrite, add information or create a list. ➡ **1.8.7** CREATE LIST
- STORE + a cell in the GROUP window: Saves the chosen scanners as a new group (enter name via keyboard)
- STORE + any cell in the preset COLOUR window: Saves the adjusted values as a color preset (enter name via keyboard)
- STORE + one of the VIEW buttons on the right hand side of the displays: Saves the layout of the screen, the mouse position, etc. as a view (enter a name ...)

TIP With STORE + VIEW button you can save screens individually or all at once.

TIP In the ASSIGN menu, you can enter names for the programs.

1.8.5 Selecting and activating channels, fixtures and functions

The concepts of Selecting and Activating have different meanings and are important terms for working with the *grandMA*.

Selected fixtures or channels (name in status window turns yellow) are automatically cleared if a setting was altered and new fixtures selected (a click on the CLEAR button will do the same).

The Active values(red) determine, which channels are ready to be saved to the next cue, and will be controlled by this cue later on. Channels not selected will never be affected by any playback of this cue (LTP rule = Latest Takes Precedence).

Changing the selection:

- Any channel or function, being controlled in Direct Access mode, is automatically marked as selected.
- Pressing the CLEAR button several times, deletes the whole selection.
  1st CLEAR: selects – 2nd CLEAR: activates– 3rd CLEAR: deletes all values set by direct access.
- Selecting a channel, fixture or function two or more times can be used to modify an activation
  1st selects – 2nd activates– 3rd deactivates

TIP By holding the STORE button and selecting ALL, the activation will be ignored and the complete output saved as a cue.

1.8.6Timing – Fade times (FADE) and Delays (DELAY)

The *grandMA* offers two different ways of storing time settings for a cue:

1. BASIC X-FADE and SNAP DELAY
   With STORE, a basic fade time can be set for all typical fader channels, whereas SNAP DELAY will only work for channels marked as snap channels in the Patch menu.
2. TIME button for individual durations per channel
   With TIME, the status windows can be switched to the FADE or DELAY layer, where individual durations can be set for each channel. These durations will be stored to the cues and will overrule any basic duration.

1.8.7 CREATE LIST

When saving a cue to an Executor already containing a cue, the *grandMA* offers the option to start a cue list, which may be called up as a Chaser or sequence later on.

In the ASSIGN menu, you can preset the Cue list as for tracking or non-tracking, respectively.

TRACKING CUELIST (typically for scanner control or theatre applications):
For this, it would make sense only to include changed values. On playback, the *grandMA* will hold a value until a new one is given by any following step (TRACKING = the *grandMA* will keep track of this value within the next steps).

NON-TRACKING CUELIST
Here, all values to be used have to be saved to the respective step, as all values not selectively stored within a step, will be switched off ("0" or default).

1.8.8 Playback buttons and faders

- The motor faders allow to work on different pages simultaneously. With OFF, the playback can be stopped.
- With the ASSIGN + EXECUTOR buttons, you can define, which program and which functions are on the Playback.
- The 12 function keys can be used for any Playback (OFF - EXECUTOR1).

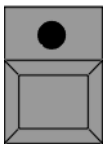
TIP To call up a cue with a fader, it has to be activated via GO+, TOP or ON.

TIP Take care for the GRANDMASTER - or simply switch it off in the Setup menu.

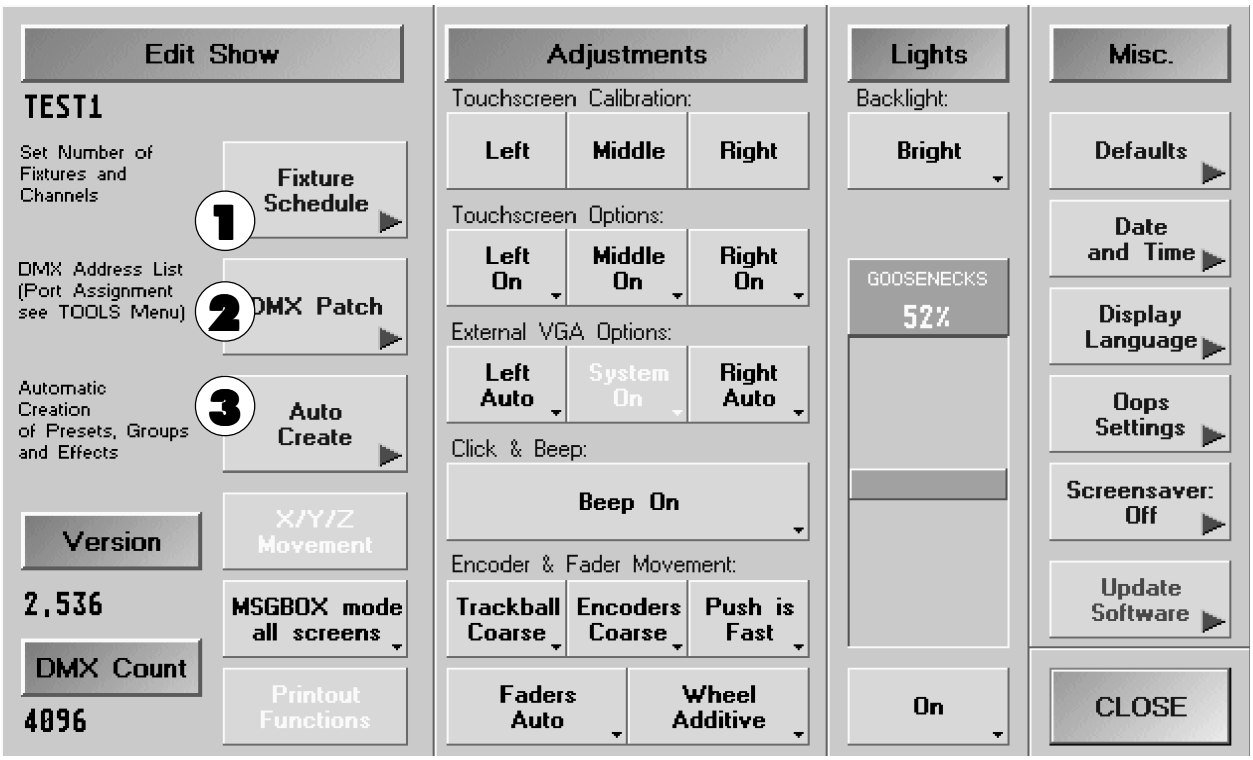
2 Setup

2.1 Selecting, patching, creating and editing of fixtures and dimmers (Edit Show)

SETUP



You will reach the SETUP menu by pressing the SETUP button.



1 FIXTURE SCHEDULE

In this menu, you can create, modify and set the number of fixture types and normal dimmer channels. ➡**2.2 / 2.3** Setting up Fixtures and Dimmer Channels

Accessing this menu will take a few seconds, as all Fixtures (approx. 250) will be loaded from the hard disk.

2 DMX PATCH

In this menu, you can choose DMX addresses for all fixtures and Dimmer channels and make lamp-type specific adjustments for the **respective** show. ➡ **2.4 / 2.5** Setting DMX addresses

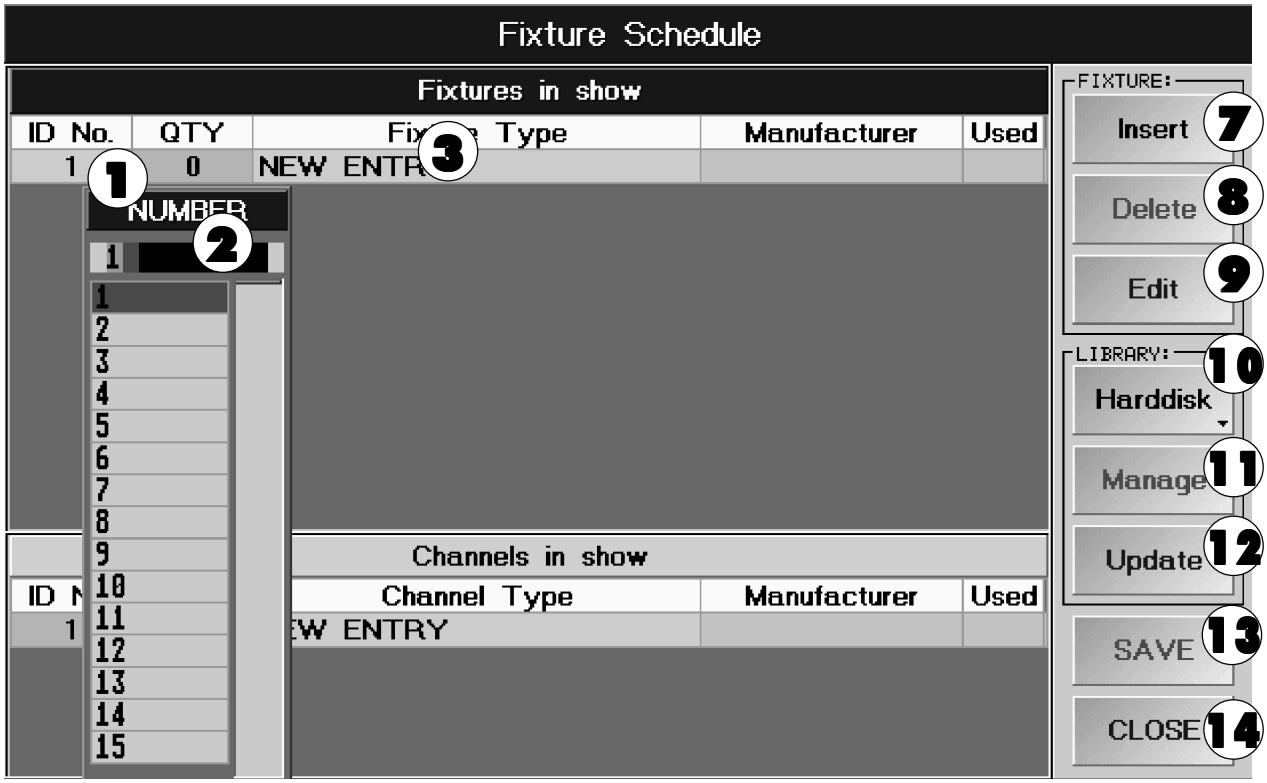
3 CREATE PRESETS

In this menu, you can have so-called presets automatically created for all registered fixtures and dimmers, if those presets are already contained in the internal library. Furthermore, prepared Effect Groups and buttons for each Fixture or Dimmer channel can be created from the GROUP window. ➡ **2.9** Creating presets, effects and groups automatically

2.2 Selecting Type and Number of Fixtures

FIXTURE SCHEDULE

Click on FIXTURE SCHEDULE in the Setup menu (might take a few seconds).



1 Make a right mouse click in the cell below the QTY title.

2 In the NUMBER window, enter the quantity of Fixtures of one type, using the keyboard. Confirm by pressing ENTER.

Or:

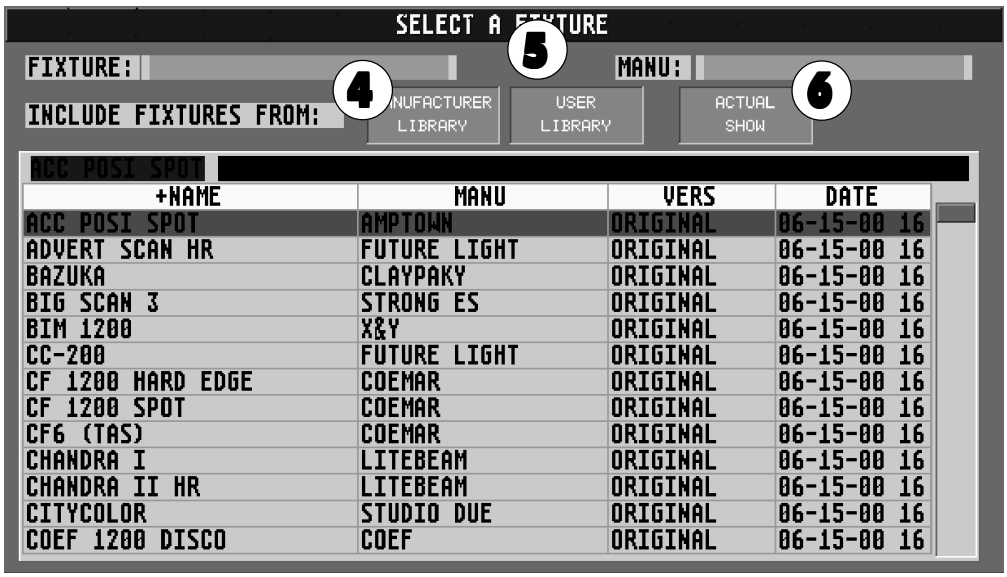
Move the red bar using the left mouse button, until the desired number of Fixtures appears. Now, make a left mouse click on the number; the selected number will be accepted.

3 Make a right mouse click on NEW ENTRY. Move the blue bar within the SELECT A FIXTURE window by holding the left mouse button until the desired Fixture appears in the left column. Select the Fixture with left mouse click. The selected Fixture will be added to the list.

TIP The list can be sorted by name, manufacturer or date for an easy and fast retrieval of fixtures.

For example: Sort by names: Right mouse click on NAME. With first mouse click, Fixture will be sorted A–Z, with second click they will be sorted Z–A.

For further Fixtures, start again with step **1** and use NEW ENTRY, one line below the new Fixture.


SELECT A FIXTURE
FIXTURE:
MANU:
INCLUDE FIXTURES FROM:
NUFACTURER LIBRARY
USER LIBRARY
ACTUAL SHOW
ACC POSI SPOT
+NAME
MANU
VERS
DATE
ACC POSI SPOT AMPTOWN ORIGINAL 06-15-00 16
ADVERT SCAN HR FUTURE LIGHT ORIGINAL 06-15-00 16
BAZUKA CLAYPAKY ORIGINAL 06-15-00 16
BIG SCAN 3 STRONG ES ORIGINAL 06-15-00 16
BIM 1200 X&Y ORIGINAL 06-15-00 16
CC-200 FUTURE LIGHT ORIGINAL 06-15-00 16
CF 1200 HARD EDGE COEMAR ORIGINAL 06-15-00 16
CF 1200 SPOT COEMAR ORIGINAL 06-15-00 16
CF6 (TAS) COEMAR ORIGINAL 06-15-00 16
CHANDRA I LITEBEAM ORIGINAL 06-15-00 16
CHANDRA II HR LITEBEAM ORIGINAL 06-15-00 16
CITYCOLOR STUDIO DUE ORIGINAL 06-15-00 16
COEF 1200 DISCO COEF ORIGINAL 06-15-00 16
4
5
6

If you exchange existing fixtures (same ID-number), all presets and cues of previous fixtures will not be deleted and can still be used for newly assigned fixtures. The names and DMX values for presets will be taken over. If necessary, you might have to check and correct the presets.

4 If the MANUFACTURER LIBRARY button (dark background) is pressed, all Fixtures stored in the library are available.

5 If the USER LIBRARY button (dark background) is pressed, all self-created Fixtures stored in the library are available.

6 If the ACTUAL SHOW button (dark background) is pressed, only Fixtures to be used in this show are available.

7 Will add a new line above the marked position.

8 Will erase the marked line.

9 Accessing the EDIT FIXTURES menu.
In this menu, the selected Fixture can be changed. If NEW ENTRY is activated, a new Fixture can be defined.
➡ **2.11** EDITING FIXTURES (modify) and **2.12** EDITING FIXTURES (create new)

If in the „Start" column the number of a Fixture is followed by an asterix, this is a Fixture that was modified or selfmade.

10 Shifting between the Fixture library on the hard disk or floppy disk. ➡ **2.11** EDITING FIXTURES (modify)

After switching to Floppy disk, it may take a few seconds for the Floppy to react.
HARDDISK LIBRARY: Uses Fixtures from internal hard disk.
FLOPPY DISK: Uses Fixtures from floppy disk.

11 Calling up the MANAGE menu.
By clicking on the Fixtures/Dimmers in this menu and selecting and pressing the DELETE ENTRY button, you can delete the self-created Fixtures and Dimmers stored in the library. Fixtures in the manufacturer library can not be deleted.

12 With UPDATE LIBRARY, you can save newly created or modified Fixtures to the hard disk drive (library) or to a floppy disk. By that, a new or modified Fixture will be available for a new show. When Fixtures are modified and stored, they are registered with the appropriate date.

To store a Fixture, please change its name as otherwise this Fixture will appear twice in the library and can only be discerned by its date.

13 All settings will be stored with the SAVE button.

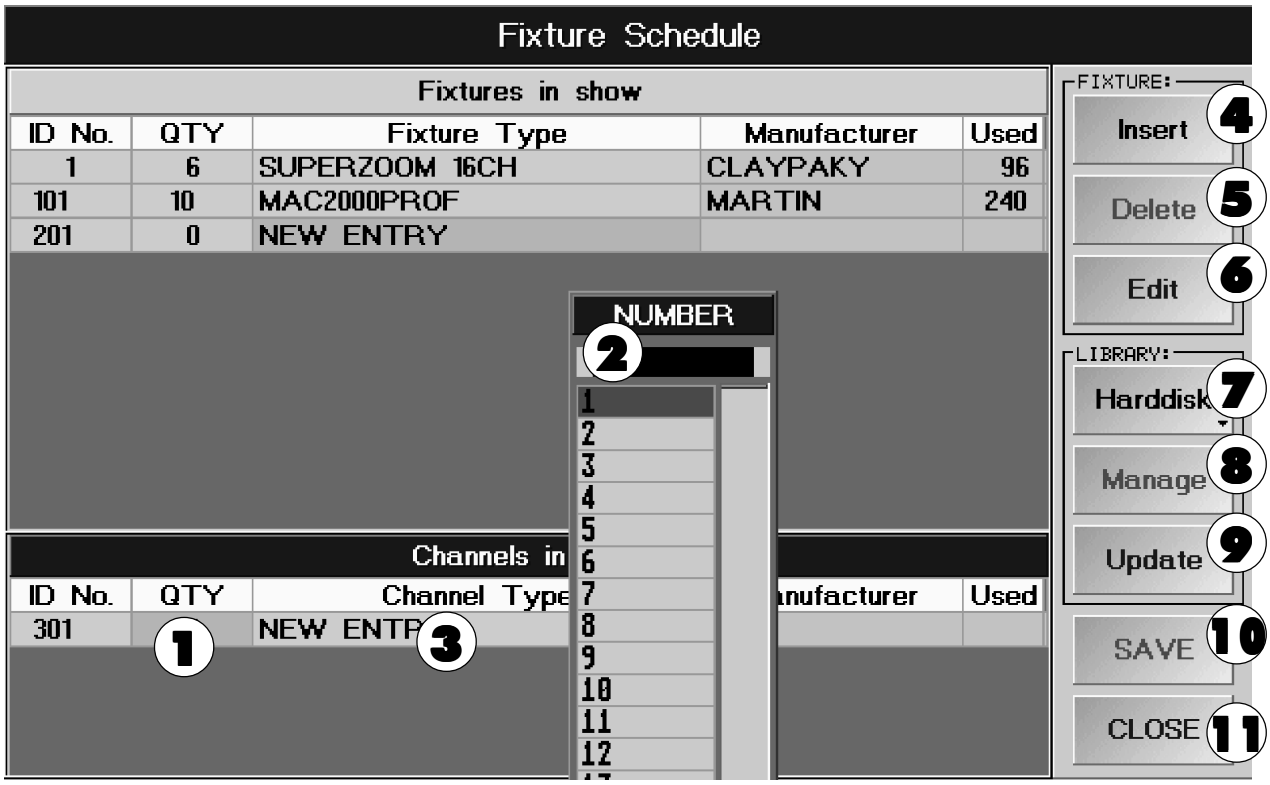
14 To leave this menu, bringing you back to SETUP.

The next step will be the patching of fixtures. ➡ **2.4** Selecting DMX addresses for Fixtures

RECOMMENDATION

After changes in the FIXTURES SCHEDULE Menu – especially the deleting of Fixtures from the Show - a RESET of the *grandMA* should be executed, for safety reasons, after leaving this menu (point **14**) (Control-Alternate-Delete). This will set up and sort the internal structure again.

2.3 Selecting the Number of Dimmer Channels



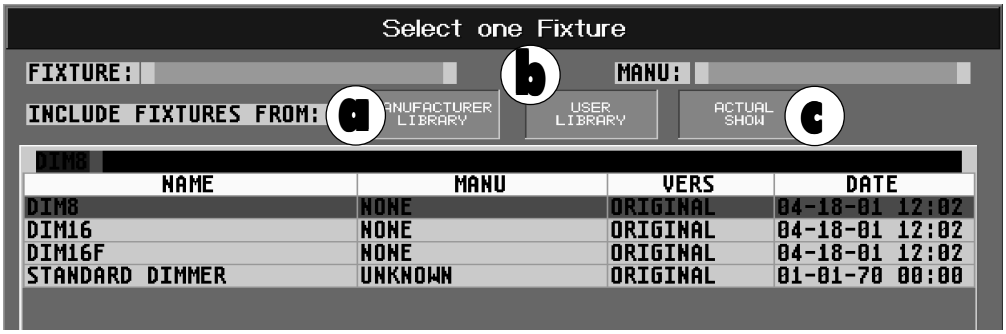
1 Activate by right mouse click on the cell below QTY. The NUMBER window will open.

2 Using the keyboard, enter the number of dimmer channels into the NUMBER window. Confirm by pressing ENTER.

Or:

Move the red bar by holding the left mouse button until the desired number of dimmer channels appears on the left. Activate number with left mouse click.The selected number will be stored.

3 Right mouse click on NEW ENTRY. The SELECT A FIXTURE window will open. The sheet shows all DIMMER types created. With a left mouse click on a Dimmer type, it will be selected.



a If the MANUFACTURER LIBRARY button (dark background) is pressed, all Dimmer types stored in the manufacturer library are available.

b If the USER LIBRARY button (dark background) is pressed, all self-created Dimmer types stored in the library are available.

c If the ACTUAL SHOW button (dark background) is pressed, only Dimmer types to be used in this show are available.

4 To add a new line in front of the marked position.

5 To erase the marked line.

6 Calling up the EDIT FIXTURE menu.
In this menu, the selected Dimmer can be modified. If NEW ENTRY is selected, you can create a new Dimmer.
➡ **2.11** Modifying Fixtures and Dimmers (EDIT FIXTURE) and ➡ **2.12** Creating Fixtures and Dimmers (EDIT FIXTURE)

If in the "Start" column, the number of a Fixture is followed by an asterix, this is a fixture that was modified or self-created.

7 Switching between library on the hard disk to library on the floppy disk, or vice versa.

After switching to the floppy disk, it can take some seconds until the floppy reacts.
HARDDISK LIBRARY: Uses Fixtures/Dimmers from the internal hard disk.
FLOPPY DISK: Uses Fixtures/Dimmers from the floppy (if any).

8 Calling up the MANAGE menu.
By clicking on the Fixtures/Dimmers in this menu and selecting and pressing the DELETE ENTRY button, you can delete the self-created Fixtures and Dimmers stored in the library. Fixtures in the manufacturer library can not be deleted.

9 With UPDATE LIBRARY, you can save newly created or modified Fixtures/Dimmers to the hard disk drive (library) or to a floppy disk. By that, a new or modified Fixture/Dimmer will be available for a new show. When Fixtures/Dimmers are modified and stored, they are registered with a new date.

To store a Dimmer, please change its name as otherwise this Dimmer will appear twice in the library and can only be discerned by its date.

10 To save all settings with SAVE button.

11 To leave the FIXTURE SCHEDULE menu.

Proceed by "patching" the dimmer channels. ➡ **2.5** Setting DMX Addresses for Dimmers

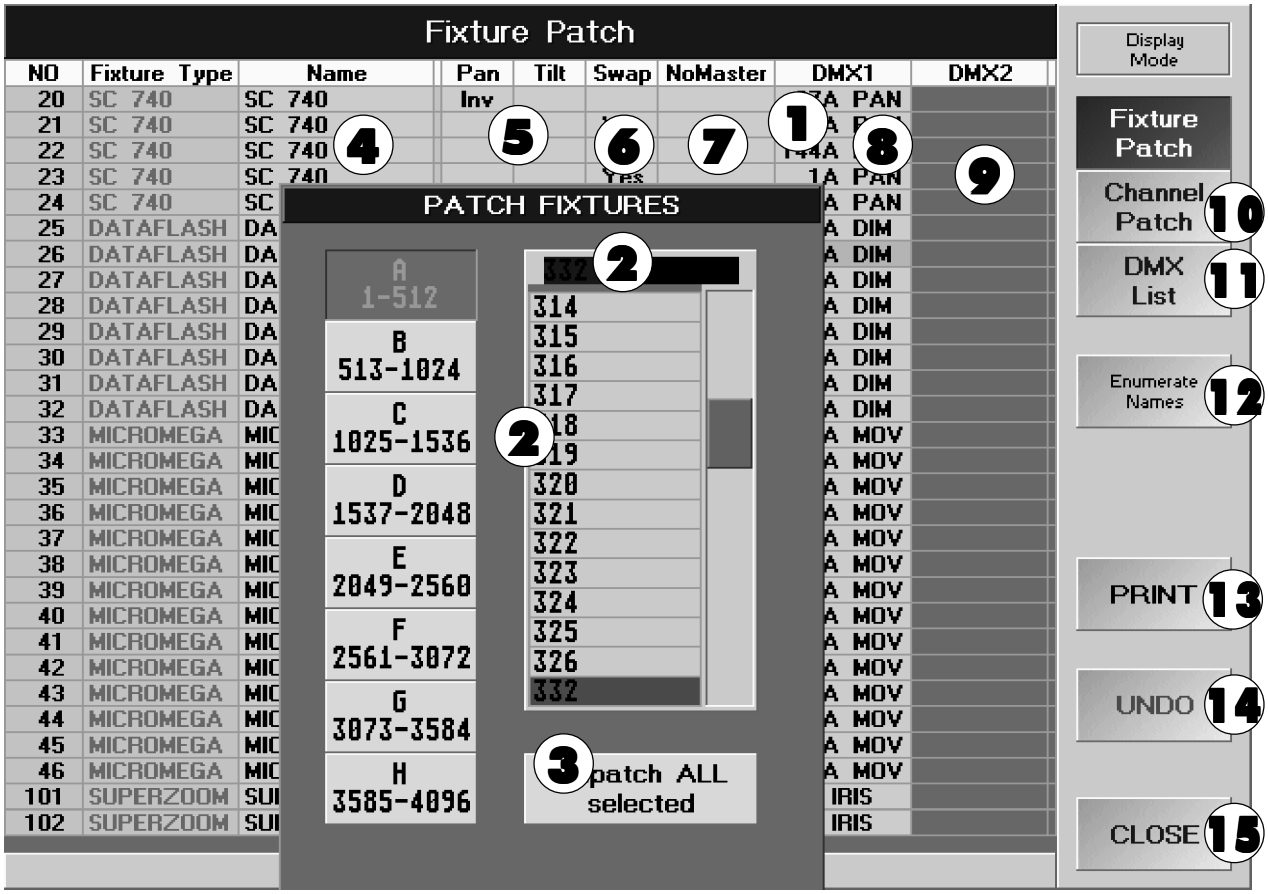
RECOMMENDATION

After changes in the FIXTURES SCHEDULE Menu – especially the deleting of Dimmers from the Show, a RESET of the *grandMA* should be executed after leaving this menu (item **8**) (Control-Alt-Delete).

2.4 Selecting DMX Addresses for Fixtures

FIXTURE PATCH

Activate PATCH in the Setup menu.



1 Select the respective fixture in the DMX 1 column by a right mouse click. The PATCH FIXTURES window will appear.

TIP If several fixtures are addressed one by one, these can be selected in one by clicking and holding the left mouse button (draw loop) in the DMX 1 column. Once the fixtures have been selected (red background), a right mouse click in the marked column will open the window PATCH FIXTURES.

2 Set the DMX output A to H via keyboard. Enter the DMX channel via the keyboard and confirm with ENTER.

Or:

Set the DMX output A to H by a left mouse click. Move the red bar by holding the left mouse button until the desired address appears on the left. Activate by a left mouse click and data will be stored. Repeat these three steps for each fixture.

Assigning the DMX sockets ➡ **2.7** DMX output configuration

Output E to H is only possible with an optional channel expansion to 4096 channels. For the expansion, an upgrade is necessary. As of serial number 156, a dongle (hardware protection) has to be installed within the *grandMA*; for serial numbers under SN 156, a plug-in card has to be exchanged. **For this operation, the unit has to be opened by a qualified technician. CAUTION: unplug the mains plug first!**

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3 To erase the DMX address of a selected fixture.

4 Selecting a name with a left mouse click, you can overwrite this name, using the keyboard, and set a new name for the respective Fixture; confirm the new name with ENTER. This name will be displayed in the FIXTURE SHEET window.

5 With a right mouse click you can invert PAN or TILT on the respective fixture. An inverted function will be indicated by an INV in the cell.

6 The PAN and TILT functions can be swapped within the SWAP column. To swap PAN or TILT on one of the Fixtures, use the right mouse button. When PAN and TILT have been swapped, this will be indicated by a YES in the respective cell.

TIP Here you can set the most useful "PAN/TILT-Trackball-Orientation" (why not try immediately?). Select the Fixture, press HIGHLIGHT and "surf" with the trackball. Modifications will only take effect after storing. For this, the HIGHLIGHT button is of great help.)

7 In the NOMASTER column, the operation of the GRANDMASTER FADER for a specific Fixture can be switched off. By a right mouse click on a cell in the NOMASTER column, the GRANDMASTER FADER for this Fixture can be switched off. A YES in the respective cell indicates that the GRANDMASTER FADER is switched off.

8 Within the DMX column, the information on a DMX address is followed by the function of the first DMX channel. This serves a better orientation.

9 With some fixtures, you will have to address a second DMX channel (for example: The dimmer of the VL 5, Scroller with dimmer). With these Fixtures, a second DMX channel has to be addressed in this column. ➡ **2.11** EDITING FIXTURES (modify) and **2.12** EDITING FIXTURES (create new)

10 This button will open the DIMMER PATCH menu (patching of dimmer channels).

11 Calling up the DMX LIST menu.
In this menu, you can modify Fixture and Channel-specific settings. ➡ **2.8** Single Channel-specific Adjustments for the Current Show

12 If this button is on „Enumerate Names", additional numbers will be generated for those Fixtures whose names are changed simultaneously. Switching the button by pressing it briefly.

13 By pressing the PRINT button the DMX sheet will be printed (default printer).

14 By pressing the UNDO Button, all changes made since this menu has been called up, will be canceled.

15 To leave the FIXTURE PATCH menu.

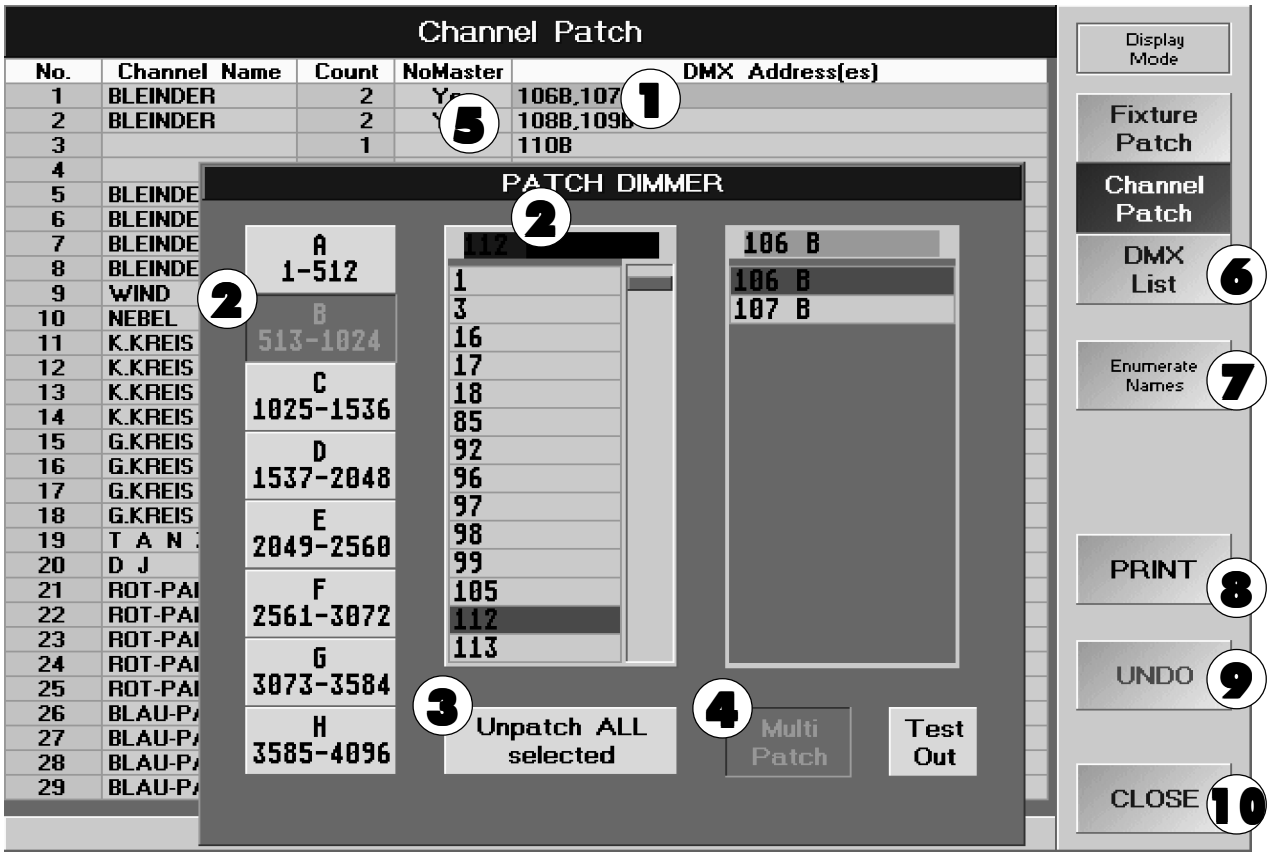
2.5 Setting DMX Addresses for Dimmers

FIXTURE PATCH

Activate PATCH in the SETUP menu.

CHANNEL PATCH

The button DIMMER PATCH will lead you to the menu EDIT DIMMER PATCH



1 Select the first dimmer channel with a right mouse click.

TIP If several dimmer channels are addressed one by one, these can be selected in one by pushing and holding the left mouse button (draw loop) in the DMX ADDRESS column. Once the dimmer channels have been selected (red background), a right mouse click in the marked column will open the PATCH DIMMER window.

2 Set the DMX output A to H via keyboard.

Set the DMX channel via keyboard; confirm with ENTER.

Or:

Set the DMX output A to H by a left mouse click. Move the blue bar by holding left mouse button, until the desired address appears on the left. Confirm figure with a left mouse click and the chosen figure will be displayed. Repeat these steps for each dimmer channel.

Assigning the DMX sockets ➡ **2.7** DMX output and Ethernet configuration

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Outputs E to H are only available with an optional channel expansion to 4096 channels. For the expansion, an upgrade is necessary. As of serial number 156, a dongle (hardware protection) has to be installed within the *grandMA*; for serial numbers under SN 156, a plug-in card has to be exchanged. **For this operation, the unit has to be opened by a qualified technician. CAUTION: unplug the mains plug first!**

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3 To erase DMX address of selected dimmer channel.

4 When the MULTI PATCH button is pressed (button's background color changes from light gray to dark gray), you can address several DMX output channels for a Fixture channel.

When the TEST OUT button is pressed (dark background), the selected DMX output channel is temporarily set to 100 percent. Doing so, you can find a patched channel much faster within the stage setting.

5 In the NOMASTER column, the operation of the GRANDMASTER FADER for a specific Dimmer channel can be switched off. By a right mouse click on a cell in the NOMASTER column, the GRANDMASTER FADER for this Fixture can be switched off. A YES in the respective cell indicates that the GRANDMASTER FADER is switched off.

6 To activate DMX LIST menu. Within this menu Fixture- and channel-specific adjustments can be realized. ➡ **2.7** Single Channel-specific Adjustments for the Current Show

7 If this button is on „Enumerate Names", additional numbers will be generated for those Dimmers whose names are changed simultaneously. Switching the button by pressing it briefly.

8 By pressing the PRINT button the DMX sheet will be printed (default printer).

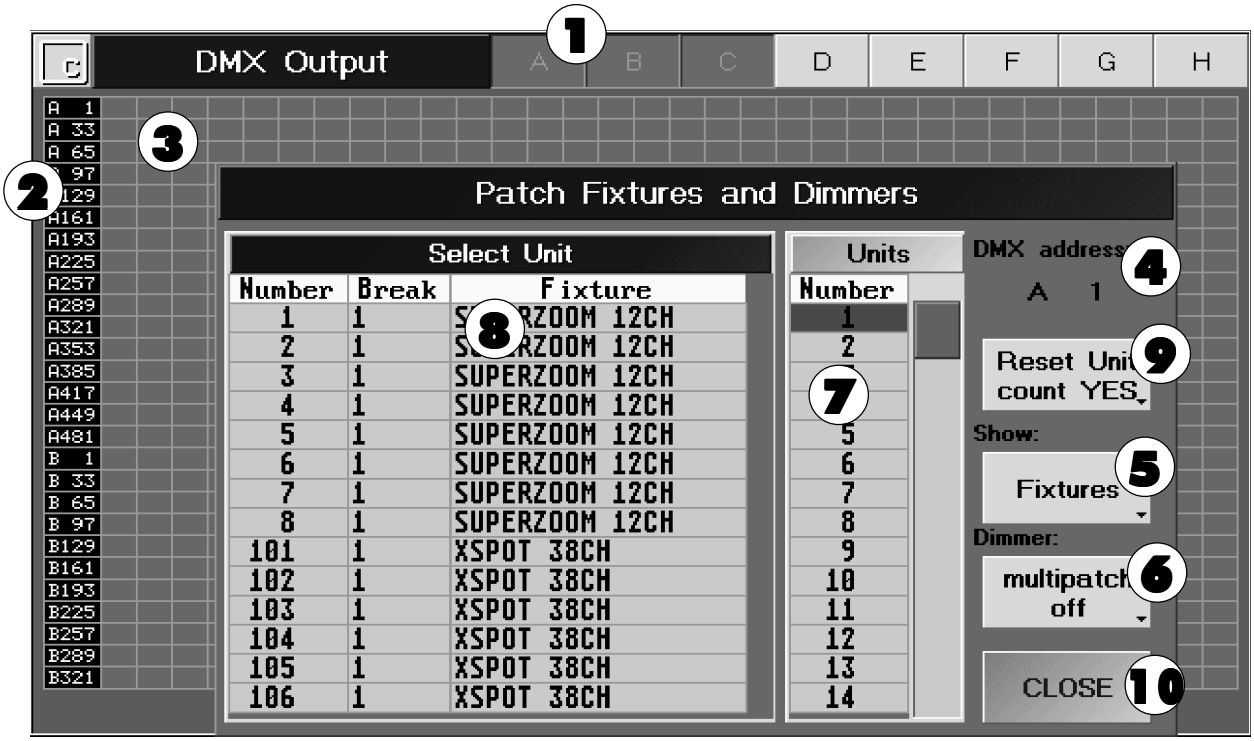
9 By pressing the UNDO Button, all changes made since this menu has been called up, will be canceled.

10 To leave the DIMMER PATCH menu.

2.6 DMX Output Window

Create a DMX Output Window (DMX) using a TFT Display. ➠ **3.1** Creating windows

1 In this window, each of the patched channels can be displayed with its triggered values.
By briefly pressing the respective buttons (A – H) (dark background), all DMX ports' DMX channels will be displayed in this window (if needed, scroll through the window using the Encoder next to the Display.)



2 Here, the first channel of this column is displayed.

3 If you position the mouse pointer on a cell, the DMX channel (possibly already patched channels with their fixture types and functions) will be displayed in the lower part of the window.

Patching Fixtures or Dimmer channels

Select the first channel for Fixture or Dimmer channels using the mouse pointer. By a right mouse click, the Patch Fixture and Dimmers window will open.

4 Here, the selected DMX channel will be displayed.

5 By pressing this button, you can chose between Fixtures (the table will only show Fixtures), Dimmers (the table will only show Dimmer channels) or both together (the table will show all Fixtures and Dimmer channels).

6 By pressing this button (changes from OFF to ON), you can switch on Multipatch for the Dimmer channels. Now, you can address several DMX output channels for a Dimmer channel.

7 Here, you can define whether just 1 Fixture /Dimmer channel or between 2 and 100 will be patched simultaneously.

8 Choosing a Fixture or Dimmer channel will patch it/them and will close the window.

9 The number of Fixtures / Dimmer channels set under **7** will be reset to 1 automatically after each patching procedure. Pressing this button briefly will switch the display from YES to NO, and the set number will not be reset after the next patching procedure.

10 Will close this window.

This window will now display all patched channels. If you position the mouse pointer above a channel, the lower part of the window will display the DMX channel and the respective channel of the pertinent Fixture / Dimmer channel. The channels pertinent to a Fixture have a blue frame (if this frame is yellow, this Fixture / Dimmer channel is already selected).
By clicking, holding and moving the first channel of a Fixture / Dimmer using the left mouse button, you can move it to another free position. The Fixture / Dimmer channel will be patched directly after been moved and at the same time, the changes will be saved.

Deleting a Patch

Perform a right mouse click on the channel of a Fixture or Dimmer channel. This will open the UNPATCHING window, where you can delete the Patch by choosing YES.

2.6.1 Options of the DMX Output window

On the touch screen, click on the left corner of the title bar.

By pressing the FONT SIZE button, you can switch the font size used in these windows between LARGE and SMALL.

By pressing the % button (DEC or HEX), you can switch the displayed values from Percent, Decimal to Hexadecimal.

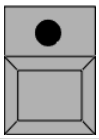
The number below **Columns** indicates, how many channels are being displayed in a column. By clicking on the number, you can enter a new value using the keyboard. Confirm with ENTER. The new number will automatically be accepted.
With the DELETE button, you can delete the DMX Output window.

2.7 DMX Output and Ethernet Configuration

There are 4 DMX output sockets on the back side of the grandMA. These sockets can be assigned to DMX ports A to H in an arbitrary way.
By data transmission via Ethernet, more DMX outputs can be triggered.

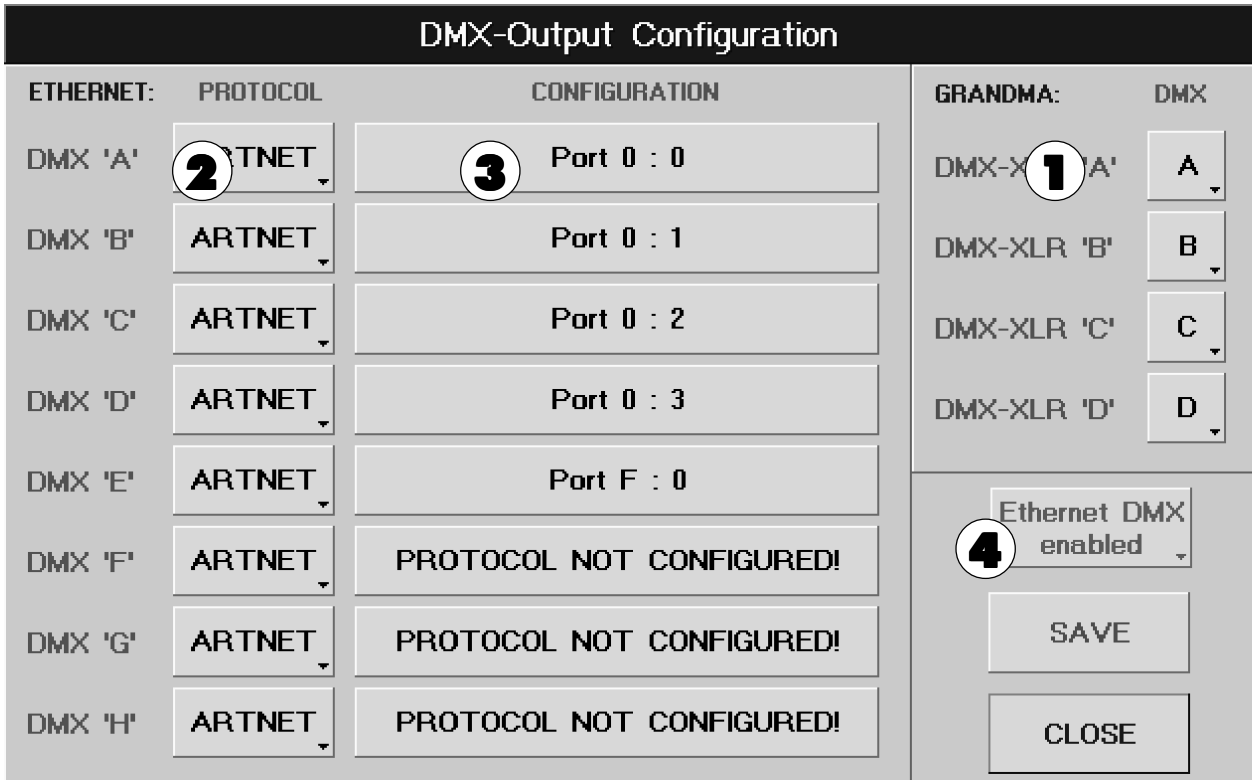
Outputs E to H are only available with a channel expansion to 4096 channels. For the expansion, an upgrade is necessary. As of serial number 156, a dongle (hardware protection) has to be installed within the *grandMA*; for serial numbers under SN 156, a plug-in card has to be exchanged. **For this operation, the unit has to be opened by a qualified technician. CAUTION: unplug the mains plug first!**

TOOLS



Press the TOOLS button once.

Call up this menu from the TOOLS menu using the DMX-OUTPUT CONFIGURATION button.



2.6.1 Assigning the DMX-XLR sockets of the *grandMA*

1 In this column, the DMX ports can be assigned to the respective output sockets on the *grandMA*.

By pressing the buttons several times, one of the DMX ports (Universe) A to H can be assigned to any of the *grandMA's* output sockets A to D. The assigning of DMX ports (Universe) to the sockets will be effected simultaneously.

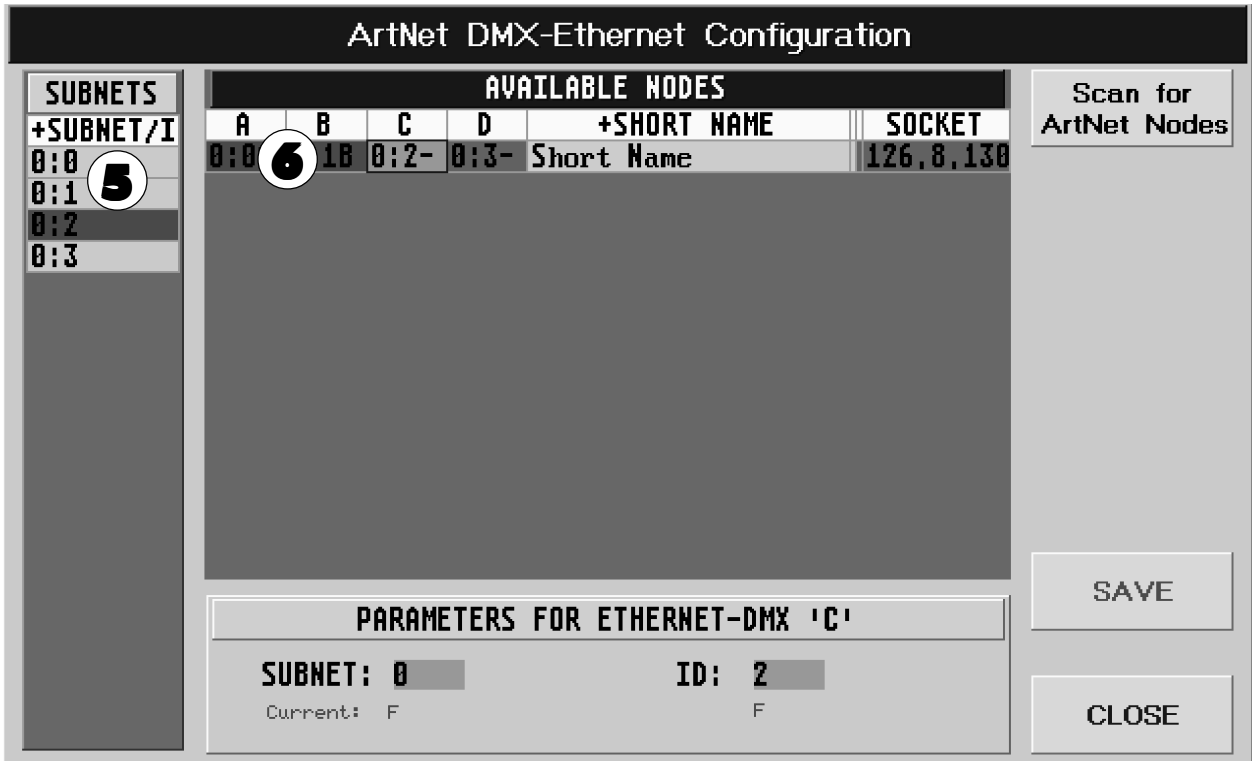
2.6.2 Configuring the DMX outputs via Ethernet

2 By pressing a button in the PROTOCOL column, a transmission protocol can be designated for the respective DMX output. In version 2.10, ARTNET of the company Artistic Licence can be assigned.

3 By pressing a button in the CONFIGURATION column, the ARTNET DMX ETHERNET CONFIGURATION menu will be opened for this DMX output. ➡ **2.7.3** ARTNET DMX-ETHERNET CONFIGURATION

4 In the position "enabled" DMX-Output via Ethernet is possible. By pressing the button it switches to "disabeld"; now DMX-Output via Ethernet is no longer possible.

2.7.3 ARTNET DMX-ETHERNET-CONFIGURATION



From software version 2.10 and later DMX hubs of the company Artistic Licence can be used. It is now possible, to connect up to 16 DMX hubs. On the DMX hubs, unique SUB NET addresses have to be designated accordingly. The address switches of the individual DMX sockets have to be set to four different addresses.

If DMX hubs are connected, they will be searched for and displayed in the chart when calling up this menu. If the hub is being activated after opening the menu, you can search for the hub by pressing the **Scan of ArtNet Nodes** button to insert the hub in the chart, if one is found.

5 In the left chart, all hubs found will be displayed with the respectively set address for each DMX OUTPUT. The number in front of the colon is the SUBNET address, the number following is the address for the DMX OUTPUT.

Choose an address for the DMX OUTPUT.

6 In the right chart, one line is displayed for each hub. The selected DMX OUTPUT will be displayed on a green background.

If an output is displayed on a red background, this indicates that it is already being assigned and can not be used.

In the SHORT NAME column, you can enter a name for each hub using the keyboard.

Press the SAVE button. Now, the hub for this DMX port is configured and the menu will be closed.

If further ports are to be assigned, repeat steps 2 to 6. When all settings are completed, press the SAVE button in the DMX-OUTPUT CONFIGURATION menu. The modified settings are now saved. Now, the blue ACTIVE LED at the assigned DMX hub is on and the DMX outputs can be used. When data is received, the red LED on the DMX hub is on.

2.8 Single Channel-specific Adjustments for the Current Show

Press the DMX LIST button in the PATCH menu to activate this menu.

This menu will only display the actually patched channels. All changes made **here** will **only** affect the **current show**!

1 This column will show the **individual**, addressed DMX channel.

2 Name of fixtures and dimmer channels assigned to the individual DMX channels.

3 Number of fixtures and dimmer channels.

4 Functions of the individual DMX channels.

5 In this column, a profile can be assigned to this cannel. ➡ **2.9** Creating, Assigning and Deleting Profiles

Using these profiles, you can also define min and max values.

6 Within this column, the respective DMX channel can be inverted. A right mouse click into the cell will activate this function. An inverted channel will be indicated by a YES in the respective cell.

7 DEFAULT: This value will be called up if no CUE, Sequence, Preset or Direct Access addresses the fixture or dimmer channel.

This setting can be used for example for PAN/TILT, in order to have the preset of the light beam in the center. These values can be set by selecting the respective cell with a right mouse click. The requested value can be entered within the activated window.

8 The HIGHLIGHT function is used to create a light beam fast and easily during the procedure of programming positions of the selected fixtures. The values for individual DMX channels have to be set respectively. These values can be set by selecting the respective cell with a right mouse click. The requested value can be entered within the activated window.

9 SNAP: New value will be activated fastest possible (jumps, does not fade: default setting). Activate by a right mouse click on the cell. A YES in the respective cell will indicate that SNAP has been chosen for this channel.

Basic setting for the respective DMX channel is FADE.

FADE: A value can be changed slowly (channel can fade, default setting).

This is only a pre-setting for each individual channel and can easily be changed during programming, if needed.

10 To move back to FIXTURE PATCH.

11 Allows to move back to DIMMER PATCH.

12 By pressing the PRINT button the DMX table will be printed (default printer).

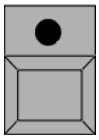
13 By pressing the UNDO Button, all changes made since this menu has been called up, will be canceled.

14 To leave the DMX LIST menu.

2.9 Creating, Assigning and Deleting Profiles

In the PROFILE TOOL menu, you can create individual profiles. The profiles created can be assigned to any DMX channel.

TOOLS



Press the TOOLS button once.

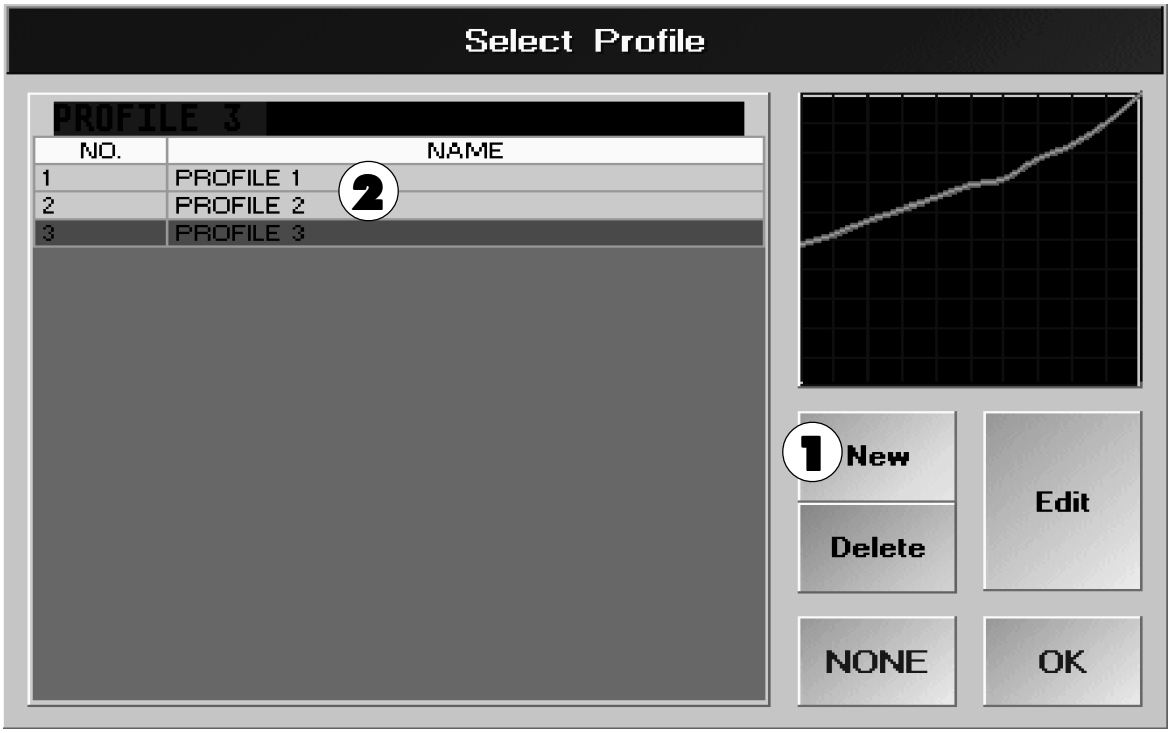
Call up this menu from the TOOLS menu using the EDIT PROFILE button.

Or:

In the DMX List menu, make a right mouse click into the Profiles column. ➡ **2.8** Single Channel-specific Adjustments for the Current Show

Or:

In the EDIT FIXTURE menu, make a right mouse click into the Profiles column. ➡ **2.11** Modifying Fixtures (EDIT FIXTURE) and ➡ **2.12** Creating Fixtures (EDIT FIXTURE)



1 The PROFILE TYPES sheet displays four folders for different profiles. Self-created profiles can be saved to these individual folders.

With the left mouse button, select a folder, in which a created profile is to be saved, deleted or edited.

Creating a new profile

To create a new profile, press the NEW button. The EDIT PROFILES menu will open (➡ next page).

2 The sheet displays the created profiles.

Assigning profiles to a DMX channel

Select the requested profile.

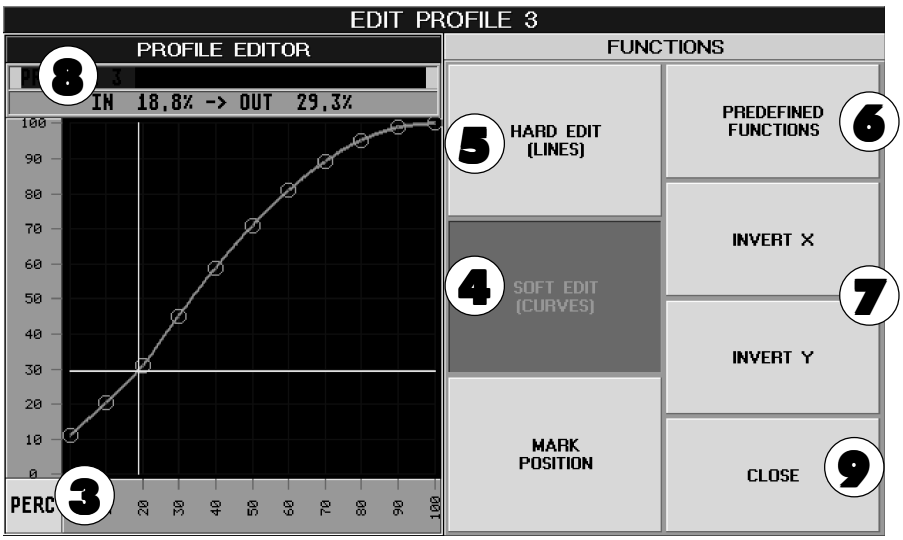
Deleting profiles

Select a profile with the encoder and press the DELETE button.

Customizing profiles

Select a profile with the encoder and press the EDIT button. The EDIT PROFILES menu will open with the selected profile (➡ next page).

2.9.1 EDIT PROFILES



3 By pressing the PERCENT button, you can switch the scaling from percent to decimal or, when pressing the button once more, to hexadecimal.

4 Press the SOFT EDIT button (dark background). On the graph, several positions are indicated by dots in regular intervals.

The y-axis gives the value set on the *grandMA*, whereas the x-axis gives the DMX value that will be output.

Make a left mouse click on an arbitrary spot or touch the touch screen. The closest dot will be moved to this position while the graph is automatically and softly adjusted to the new positioned dot. The spot clicked on is indicated by a cross-hair pointer and the size of the value is displayed above the diagram. The value after IN is the value set on the *grandMA*, the value after OUT is the DMX value to be output.

Or:

Turning the Encoder will move a cross-hair pointer on the drawn line. By pressing and turning the Encoder, you can modify the output value. Above the diagram, the value at the current position is displayed. The value after IN is the value set on the *grandMA*, the value after OUT is the DMX value to be output.

Release the Encoder and press it once or press the MARK POSITION button. The closest dot is moved to the marked position while the graph is automatically and softly adjusted to the new positioned dot.

5 If the HARD EDIT button is pressed (dark background), the graph can be formed arbitrarily.

Mark the first modification dot by a left mouse click or shortly touching the touch screen on an arbitrary spot. This position will be marked by a red dot.

or:

Turning the Encoder will move the cross-hair pointer on the drawn line. By pressing and turning the Encoder, you can modify the output value. Above the diagram, the value at the current position is displayed. The value after IN is the value set on the *grandMA*, the value after OUT is the DMX value to be output.
Now, mark a second position using the mouse, the touch screen or the Encoder. The graph will automatically connect the first dot with the second one.

6 Pressing the PREDEFINED FUNCTION button will open a window, in which you can choose between four standard graphs by clicking on the respective button. Close the window with the EXIT button.

LINEAR: The set value corresponds to the DMX output.

SINUS: The graph displays a sinus curve.

SQUARE: The graph displays a root function.

POWER CORRECTION: The graph serves for correcting a phase-angle Dimmer.

7 Pressing the INVERT X or Y button will invert the values of the x- or y-axis.

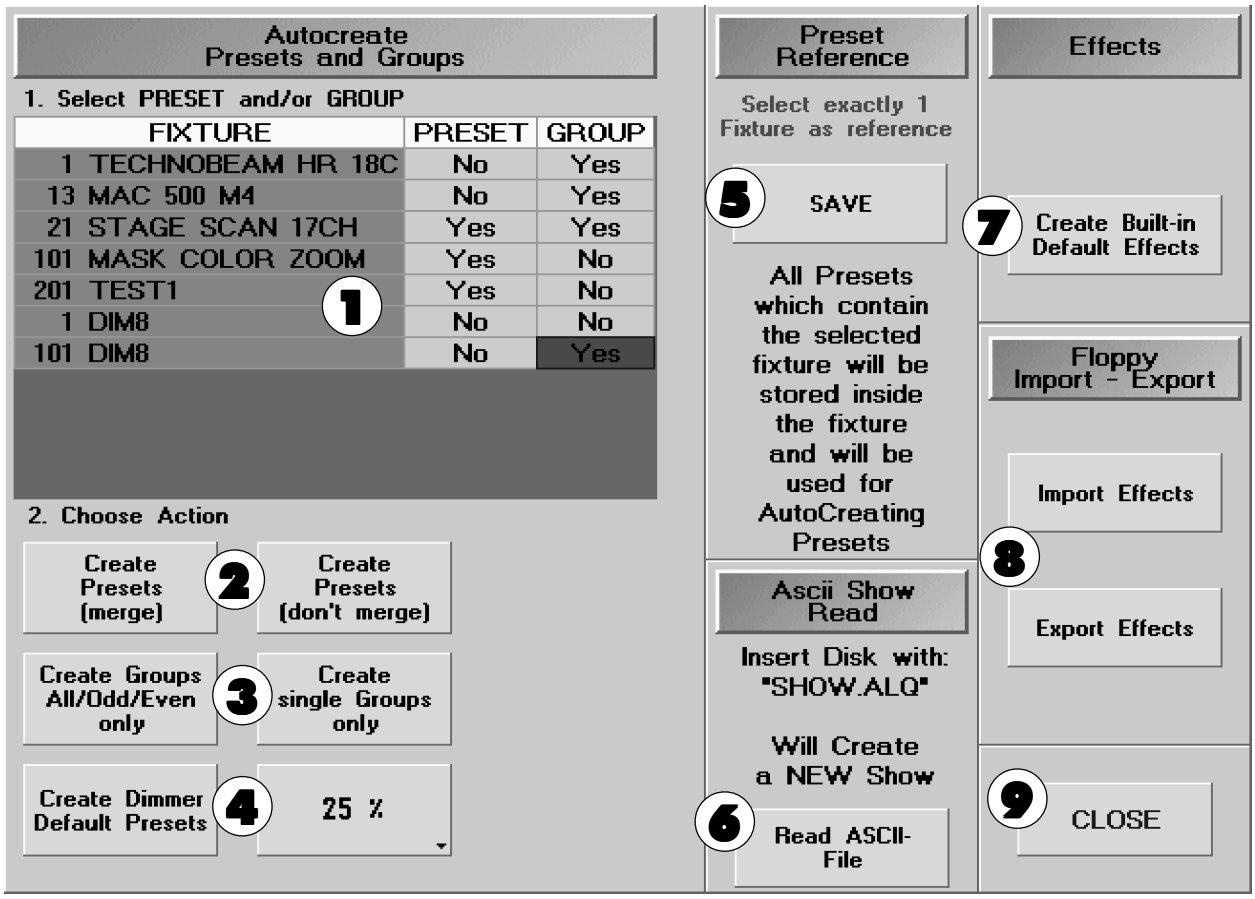
8 The current name will be displayed here. The created curve can be renamed using the keyboard.

9 Pressing the CLOSE button, you will save the graph and leave the menu.

2.10 Creating presets, effects and group buttons automatically

For most of the Fixtures in the library, there are ready-made presets that can be created here. Furthermore, ready-made effects and buttons for each Fixture and Dimmer can be created in the GROUP window.

Call up AUTO CREATE in the SETUP menu.



1 The sheet shows all Fixtures and Dimmers that are used in the current show. On the right side of each Fixture or Dimmer, there is a cell for PRESET and GROUP. In the cells, a NO is displayed. You can switch over to YES by right mouse clicks on the individual cells or using the Encoder on the right side of the Display. When creating presets or group buttons, they will be created only for these specific Fixtures or Dimmers.

2 By pressing the CREATE PRESETS (merge) button, the presets for all fixture types will be created simultaneously. Different fixtures with the same name will be displayed on ONE Preset button.
Pressing the CREATE PRESETS (don't merge) button will create individual presets for each fixture type.

The created presets are now available in the separate PRESET WINDOWS.

3 Pressing the CREATE GROUPS button will create an ODD button for each fixture type, an EVEN and an ALL button. The ODD button selects all odd fixtures, the EVEN button all even fixtures and the ALL button selects all fixtures.

Pressing the CREATE SINGLE GROUPS button will create a separate button for each fixture within the GROUP window.

4 Pressing the CREATE DIMMER DEFAULT PRESETS button will create presets for each dimmer channel in individually definable steps. Pressing the button beside, these presets can be set to 4 values (5, 10, 20 or 25%).

5 To save self-created presets from a reference fixture, select that particular fixture. Press the SAVE button. The presets will now be saved in the USER library for the Fixture in this Show (same name, just new date and time stamp). If future Fixtures of this type will be registered, the created presets can be loaded using CREATE PRESETS (see item **2**). In order to use this Fixture with the self-created presets for other Shows or on other consoles, this Fixture must be saved to the USER library on the HDD or floppy. ➡ **2.11.3** Updating the Fixture Library (USER Library)

6 With a disc inserted containing a show in ASCII format (file with extension .ALQ), the show can be loaded by pushing this button. No scanner datas can be transferred.

7 Pressing this button will create prepared effects, which will be available in the EFFECT POOL afterwards. ➡ **6** Effects.

8 Pressing the **IMPORT EFFECTS** button you can load already saved effects from a floppy.

Pressing the **EXPORT EFFECTS** button you can save created effects to a floppy.

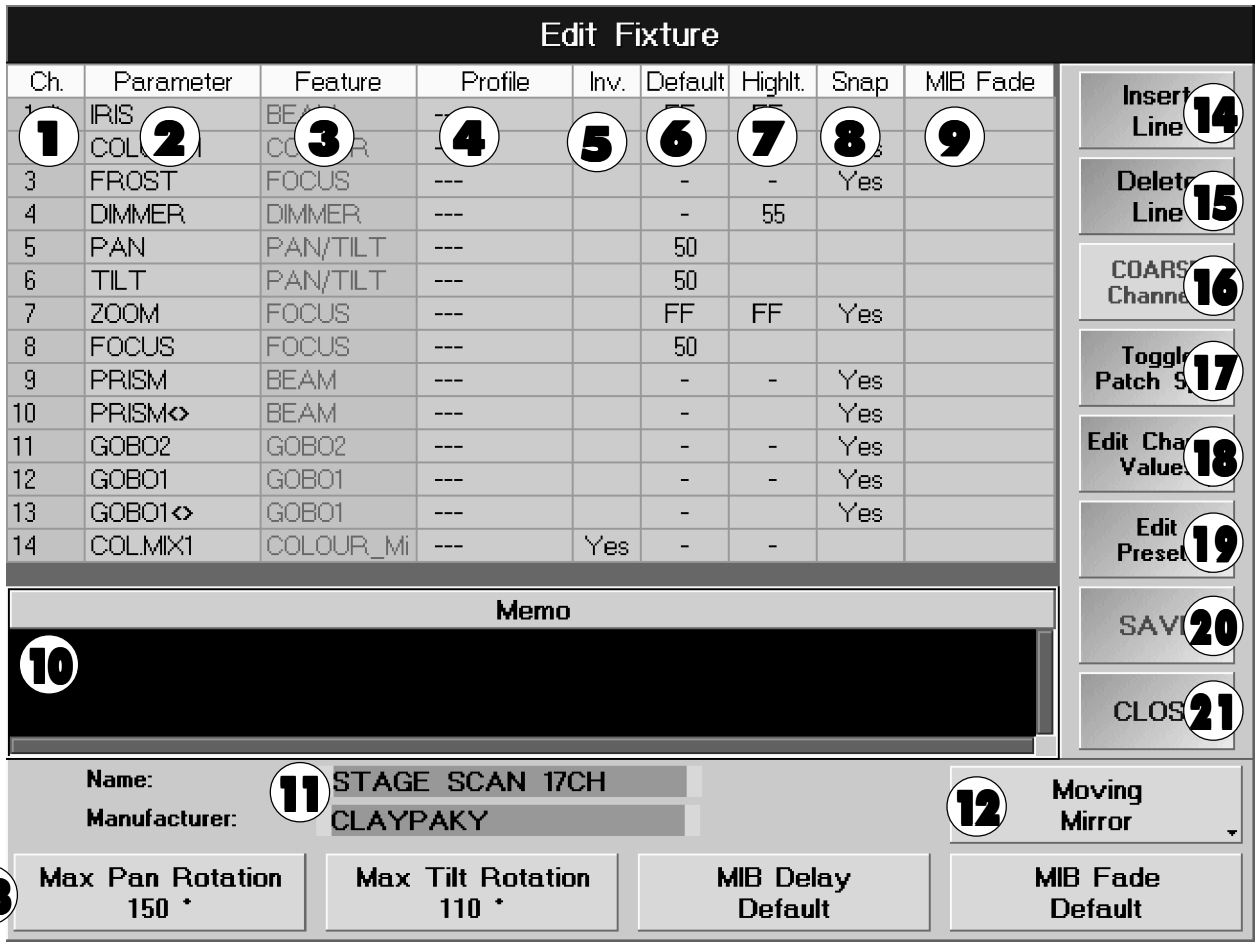
9 You can leave the CREATE PRESET menu with the CLOSE button.

2.11 EDITING FIXTURES (modify)

If an existing fixture has to be changed, you have to select it in the FIXTURE SCHEDULE.

EDIT

Press EDIT FIXTURE in the FIXTURE SCHEDULE to activate this menu.



2.11.1 Listing of individual functions in the EDIT FIXTURE menu

1 CH: Listing of individual channels

2 PARAMETER: Column for individual functions

3 FEATURE: Display of group functions (Preset Group)

4 PROFILE: In this column, a profile can be assigned to this cannel. ➡ **2.9** Creating, Assigning and deleting profiles

5 INVERS: Within this column, the respective channel can be inverted

6 DEFAULT : This value will be called up when the Fixture receives no Cue, Sequence, Preset or Direct Access signal

7 HIGHLIGHT: This value will be called up when these Fixtures have been selected and the HIGHLIGHT button is pressed

8 SNAP: FADE/SNAP function for the respective channel ➡ **2.8** Single Channel-specific Adjustments for the Current Show (point 9)

9 MIB FADE: Basic setting of fade time for the MOVE IN BLACK function

10 MEMO: Cell to enter additional notes concerning the fixture.

11 NAME/MANUFACTURER: To change the Fixture's name and manufacturer.

Additional note to item **11**: This is recommended, as otherwise the same name might exist twice.

12 TYPE OF FIXTURE: Swap between mirror or head Fixture. When using head Fixtures, the FIXTURE SHEET will show a square left of the PAN value, indicating the current head position.

13 Encoder names:

MAX PAN ROTATION: Value of maximum deflection from PAN function; important for Flip functions.
MAX TILT ROTATION: Value of maximum deflection from TILT function.
MIB DELAY: To set a DELAY time for the MOVE IN BLACK function for this fixture.
MIB FADE: To set a FADE time for the MOVE IN BLACK function for this fixture.

14 To add one empty line in front of the marked position in the chart.

15 To erase the marked line.

16 If COARSE is displayed on this button, normal channels will be created when setting up functions. Pressing the button one time, it will display FINE. Now, when creating functions, you can define a FINE channel for each function.

17 Enables you to assign separate DMX addresses to a fixture. Beginning with the respective channel, where the figure is followed by an asterix, a new DMX address can be assigned later on.

18 Here, you can create or change so-called Channel Values (i.e. names for set values displayed in the Fixture Sheet) for individual functions (e.g. COLOUR). ➡ **2.12** Creating Fixtures (EDIT CHANNEL VALUES) Item **3**

19 This is where you can create or delete Presets for the various functions (for example: COLOR). ➡ **2.12** Creating Fixtures (EDIT FIXTURE), item **4**

20 The SAVE button will save all changes **only** within and for the **current show**.

21 To leave the EDIT FIXTURE menu.

2.11.2 Modifying Fixtures

All settings for the selected fixture will be displayed in the chart.

By selecting the function or value, the settings can now be changed.

For example:

- Selecting a DEFAULT value with a left mouse click. ➡ **2.12.1** Listing of individual functions in the EDIT FIXTURE menu (point 6)
- Confirm with ENTER (on the keyboard) or make a right mouse click into the marked space (red background).
- The SET VALUE window will appear.
- Enter the new value or select it with the left mouse button.
- The selected value will now be listed in the chart.
- By pressing the SAVE button, all changes will be saved.

The modified fixture can only be used for the *current show.*

2.11.3 Updating the Fixture Library (USER Library)

If you wish to include this fixture configuration in the general fixture library (on hard or floppy disk), this has to be updated (save on hard or floppy disk).

HARDDISK

In order to add this fixture to the harddisk library, the HARDDISK LIBRARY button must be activated (default). If the fixture is to be saved on floppy disk, the HARDDISK LIBRARY button has to be switched to FLOPPY LIBRARY (Fixture library on floppy disk). This way, you can also put fixtures in external archives and transfer these to other *grandMA* consoles and operators.

If you wish to save to a floppy disk, please insert an empty IBM/PC formatted 3.5" disk. Remove the write protection on the disk. After switching to floppy disk, it might take a few seconds for the floppy to respond.

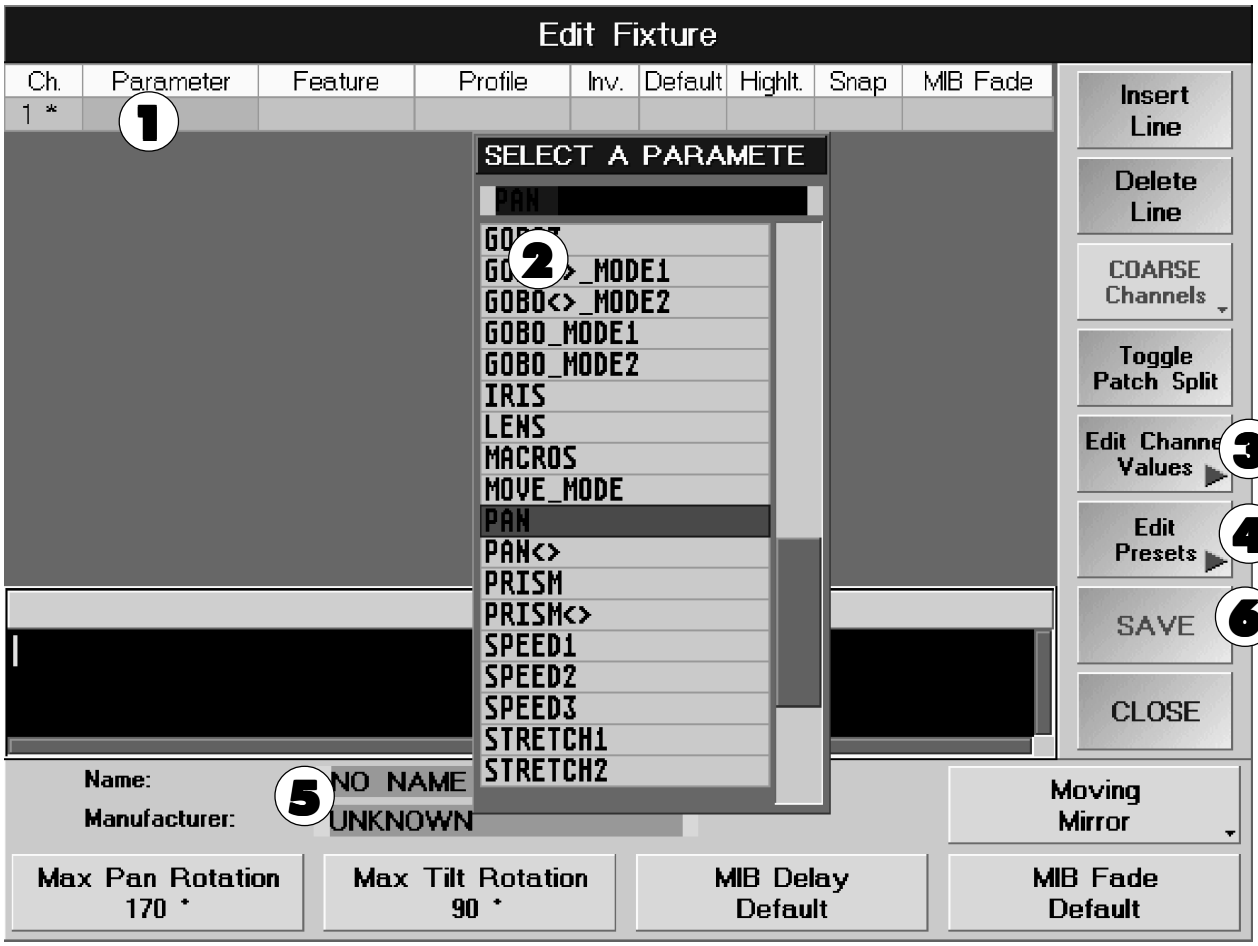
UPDATE

Select the fixture in FIXTURE SCHEDULE (blue frame).The selected fixture will now be saved by pressing the UPDATE LIBRARY button. **Remove the disk from the drive afterwards.**

2.12 EDITING FIXTURES (create new)

In order to create a new fixture, activate NEW ENTRY in the FIXTURE SCHEDULE menu with a left mouse click.

Press the EDIT FIXTURE button in the FIXTURE SCHEDULE to call up this menu.



1 Select the cell on the right side of CH. 1 (will be displayed with a red background). Press ENTER (on the keyboard) or make a right mouse click into the cell. The SELECT A PARAMETER window will open.

2 Now, select the function for the first channel. It will automatically be inserted into the cell.

For further functions, repeat these two steps each time by using the cell below.

The DUMMY Function is meant for fixed channels. The output value for this channel has to be set in the DEFAULT column. This channel can not be modified in the FIXTURE-SHEET.

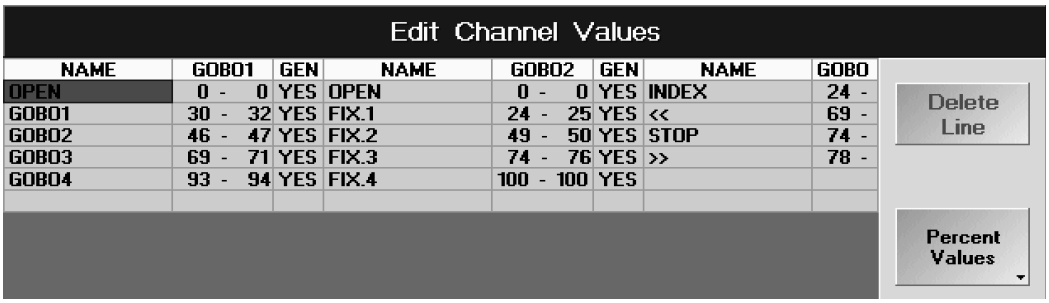
If all fixture functions have been selected, you can now program the presets.
The following factory presets are available

- PROFILE
- INVERS
- DEFAULT
- HIGHLIGHT
- SNAP
- MIB FADE
- PAN / TILT MAX, MIB DELAY and FADE
- TYPE OF FIXTURE

➡ **2.11.1** Listing of individual functions in the EDIT FIXTURE menu

3 Here, you can create or modify Channel Values for the individual functions (e.g. GOBO).

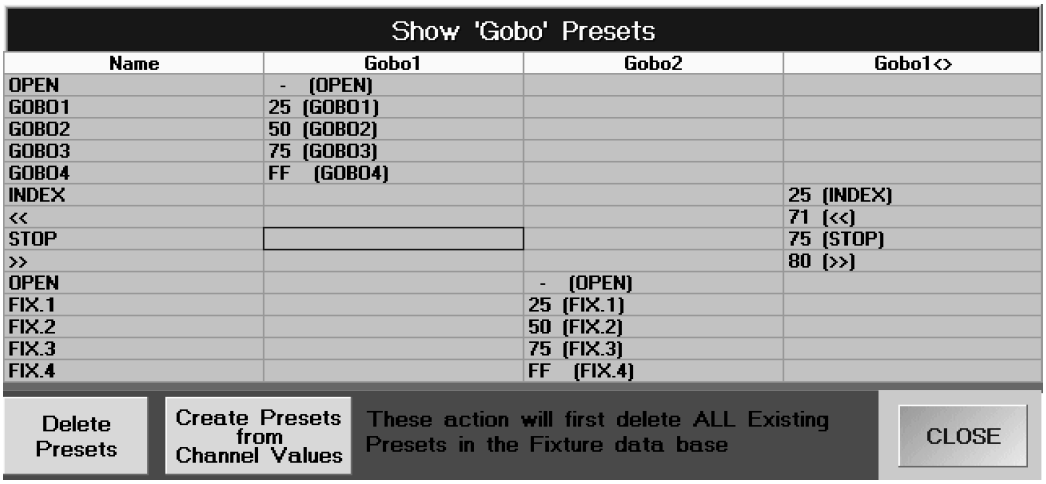
Pressing the EDIT CHANNEL VALUES button will open the Select Feature Group To Edit menu, where you can select a Feature Group. The EDIT CHANNEL VALUES menu will open.



Select the cell below NAME and enter a name for a preset. In the next column, enter the value for this name. With the PERCENT VALUES button you can switch between displaying the values in either Percentage, decimal or hexadecimal numbers. If you select this Fixture from the Fixture Schedule, these names will be generated automatically. If the names are not be created automatically, select the cell and switch over to NO by pressing an arbitrary button. For further presets, use the next line (as an example ➡ illustration above).

4 Here, you can create or modify presets for the individual functions (e.g. GOBO).

Pressing the Edit Presets button will open the Select Preset Group to Edit menu, where you can select a Preset Group. The Show Presets menu will open.



By pressing the „Create Presets from Channel Values" button, you can generate presets from the names (see above: the allocated name values will be used for the presets) for the Fixture. Then, all presets in this group will be displayed. These presets will be generated when creating them automatically (➡ **2.10** Creating presets, Effects and Group buttons automatically). By pressing the Delete Presets button, all presets in these groups will be deleted.

5 After all parameters have been set, **give them a name.** Perform a left mouse click on NO NAME. This column will now have a blue background and you can enter a name, using the keyboard; confirm with ENTER.

Please make sure that the chosen name does **not** already exist, because otherwise two with the same name can later only be recognised by their date.

Now name the MANUFACTURER (name of manufacturer will help you find the fixture much faster later on). Continue with a left mouse click on UNKNOWN. This column will now have a blue background and you can enter a name using the keyboard; confirm with ENTER.

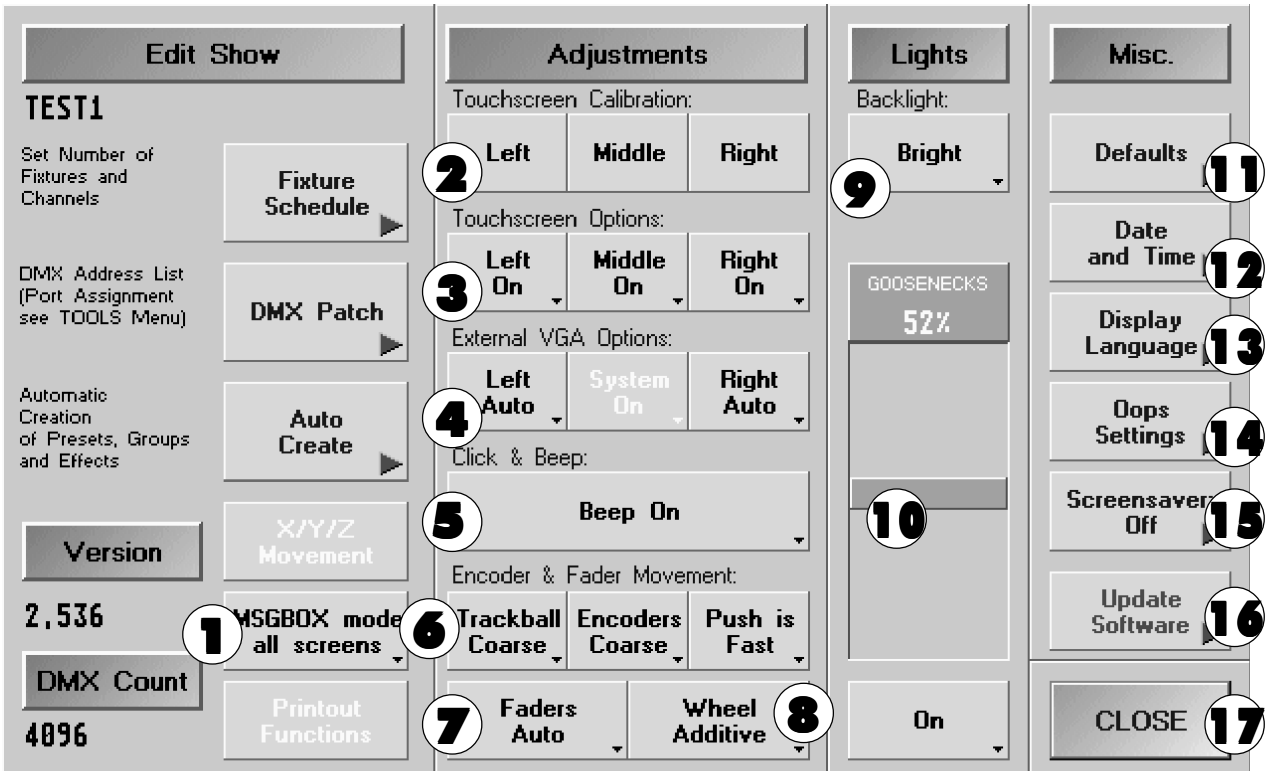
6 With the SAVE button, all settings will be saved and you switch to the FIXTURE SCHEDULE menu.

The created fixture can only be used for the *current show.*

If you wish to include this fixture configuration in the general fixture library (on hard or floppy disk), this has to be updated (save on hard or floppy disk).

➡ **2.11.3** Updating the Fixture Library (USER Library)

2.13 Settings in the Setup Menu



1 By shortly pressing this button, you can set the confirmation menus (e.g. SAVE) to be displayed on either only the right-side TFT touchscreen or on all displays.

2 By clicking this button, four calibrating buttons, numbered 1 to 4, will be displayed on the respective TFT display. Now, activate the buttons using your finger or the supplied pen (special pen with soft rubber core). After the last button, the display will automatically switch back. Now, the touchscreen is calibrated. The setting will automatically be saved.

3 With the respective button, the touch screens can be switched on or off, respectively. If one of them is faulty, it may occur that the mouse will freeze on one position and can not be operated anymore. In this case, the touchscreens can be switched off. For this, use function key F9 on the keyboard.

F9 will switch off all three touchscreens (emergency switch). To switch the touchscreens back on, you can use the mouse again.

4 To switch the mouse function on both external monitors on and off. In AUTO mode, the software will recognize by itself, if a monitor is connected or not and will switch the mouse function for the external monitors on or off, respectively.

OFF **will not allow** any mouse function, while ON will keep the mouse function **activated** at all times.

5 With this button, the *grandMA*'s acoustic sensor can be switched on or off (with older grandmas, probably not available).

6 To set the sensitivity of trackball and coarse, fine or extra fine (16bit resolution) of the Encoder. With the PUSH button, you can set the Encoder's sensitivity while holding the button down.

7 Switching between the Motorfader functions (Executor Fader, Channel Fader).

AUTO:	Executor Faders:	When switching between the Pages, the Motorfaders will automatically pick up the values saved last.
	Channel Faders:	Faders adjust to the called-up values of the allocated channels.
MANUAL:	Executor Faders:	When switching between the Pages, the saved values will be called up, but the Faders will **not** follow. To change a saved value, you have to use the Fader to manually set it to a higher or lower value.
	Channel Faders:	Faders do not adjust automatically to the called-up values of the assigned channels. To change a saved value, you have to use the Fader to manually set it to a higher or lower value.

DISABLED: **Faders without function**
Executor Faders: When switching between the Pages, the saved values will be called up, but the Faders will not follow.
Channel Faders: Faders do not adjust automatically to the called-up values of the assigned channels.

8 To switch the wheel's functions for the dimmers.

Additiv: All dimmer values will be changed simultaneously. If they reach "0" or "FF", they will be aligned.

Incremental: All dimmer values will be changed simultaneously. If they reach "0" or „FF", the respective intervals will be maintained.

Prop.+: All dimmer values will be changed in percentages and will reach "0" simultaneously.

Prop.–: All dimmer values will be changed in percentages and will reach "FF" simultaneously.

Please note, that with PROP+ a change of the value "0" is not considered a change.
Please note, that with PROP– a change of the value "FF" is not considered a change.

9 To switch between "Light" and "Dark" display background illumination.

10 The desk lamp can be switched either on or off with the ON/OFF button. The brightness of the desk lamp can be changed using a left mouse click on the blue bar or using the touchscreen.

11 By pressing this button, you will enter the DEFAULTS menu. All general presets can be set in this menu. ➡ **2.14** Settings in the DEFAULTS menu

12 By pressing this button you will enter the DATE and TIME menu. ➡ **2.17** DATE and TIME

13 By pressing this button you can change the display language.

14 By pressing this button, you will open the OOPS Function Options menu ➡ **below**

15 To switch the screen saver off an on. By pressing the button briefly, a window will appear where you can select the time after which the screen saver is supposed to kick in.

16 By pressing this button, you will reach the UPDATE SOFTWARE menu. The operating system, the operating software as well as the console software and the fixtures can be updated from this menu. ➡ **10** Software Update

17 To leave the SETUP menu.

2.13.1 OOPS Function Options

If the OOPS function is activated, the old setting will always be saved additionally when executing commands or entering values. This requires many resources slowing the console down. As the execution of programs may be compromised thereby, this option can be switched off completely or for specific functions.

General: If the button is on Enabled, all OOPS functions are available – except those for the VIEWS commands or entries in the PROGRAMMER (which can be switched off separately; for further information see below). Pressing the Enabled button next to General will switch it over to Disabled and all OOPS functions will be switched off.

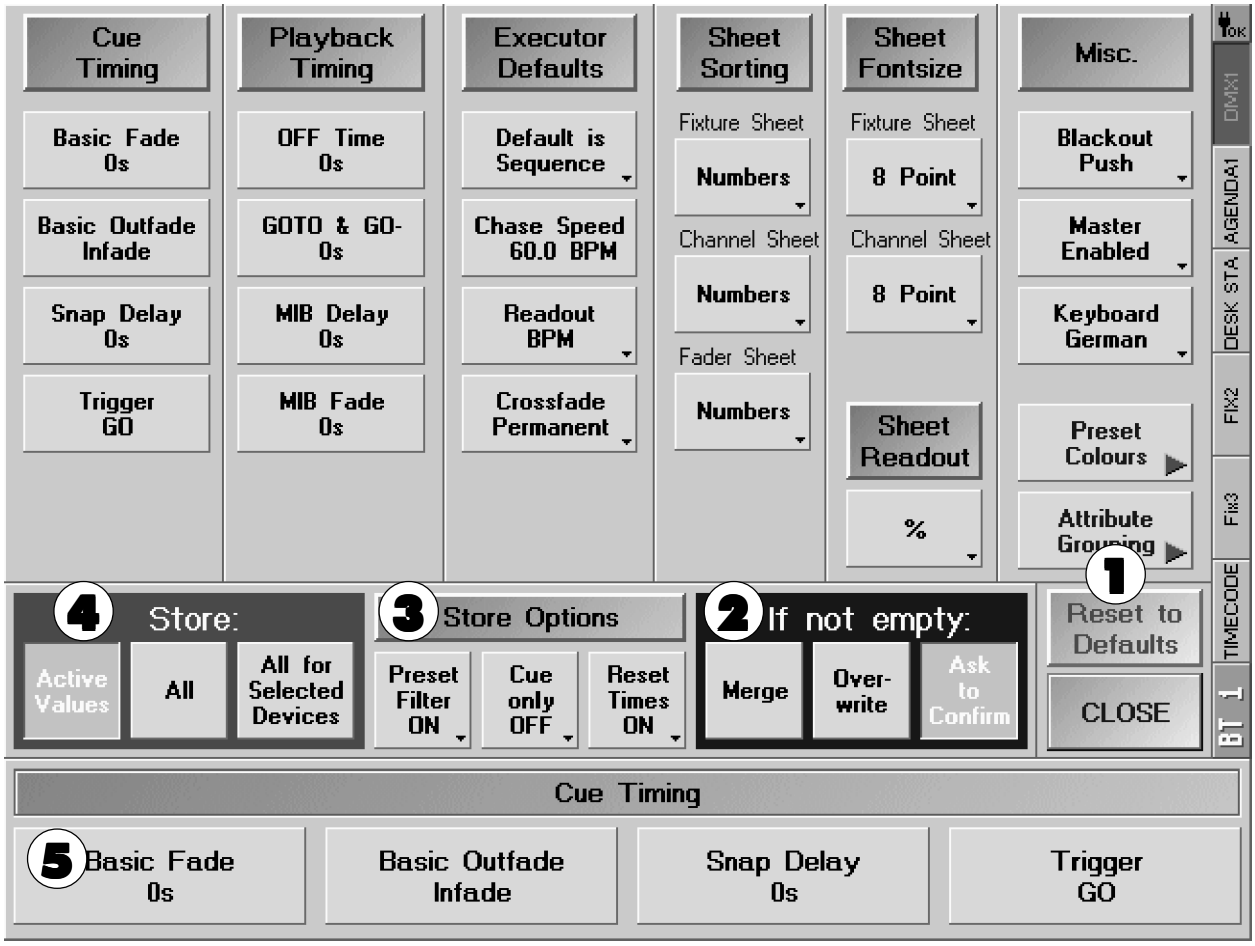
Oops for Views: If the button is on Enabled, OOPS functions can be used for VIEWS calls and creating or deleting VIEWS buttons. Pressing the Enabled button will switch it to Disabled and the OOPS function can no longer be used for VIEWS commands.

Oops for Programmer: If the button is on Enabled, the OOPS function is available for entries in the PROGRAMMER (selecting/deselecting or activating/deactivating Fixture or Dimmer channels). Pressing the Enabled button will switch it to Disabled and the OOPS function can no longer be used for entries in the PROGRAMMER.

Pressing the CLOSE button will close the menu and save the settings.

2.14 Settings in the DEFAULTS Menu

Pressing the DEFAULT button in the SETUP menu will bring you to the DEFAULTS menu.



Cue Timing

This column will display the preset times and settings that will be used when saving Cues and Sequences.

Using the Encoders, you can adjust the individual times and trigger calls.

Playback Timing

The duration set for the **OFF Time** will be used when switching off Executors (OFF button).

GOTO & GO-: If a specific time is set when calling up a Cue using the GOTO or GO- function, the Cue will be called up with this duration. If Cue Timing was set, the Cue will be called up with the duration programmed in this Cue. You can overwrite the Goto Default duration at any time. ➡ **4.2.3** Default Sequence (Master Sequence)

Here you can enter a Default time for MIB DELAY and FADE. ➡ **5.1.4** Move in Black Option

Executor Defaults

Default is Sequence/Chaser: With this button, you can define, whether a newly programmed sequence will be created as a Chaser (running light) or as a Sequence (GO MODE) (default setting).

Chase Speed: Here, you can define the preset for Chase Speed and Effect Speed.

Readout: By pressing the button, you can here switch the Chaser Speed between BPM (beats per minute), Hz (beats per second) and SEC (seconds).

The preset of the Chaser Speed is also used for the Effect Speed.

Crossfade Reload/Permanent: Here, you can define whether Fading should be performed just in one direction (Reload) or in both directions (Permanent).

Sheet Sorting

By the SORTING column, you define according to which aspects the fixtures and channels shall be sorted when setting up new windows. You can switch to the next option by clicking on the respective buttons.

Sheet Fontsize

With the FONTSIZES column, you can define the type size of new windows.

Sheet Readout

Preset for the output of numbers in the OUTPUT, CHANNEL and PATCH windows.

Misc

- Function of BLACKOUT button:
  PUSH: serves as push button (key)
  TOGGLE: will remain active when pressed
  DISABLED: switches the blackout function off
- Function of the GRANDMASTER FADER:
  ENABLED: Fader active
  DISABLED: Fader inactive
- KEYBOARD GERMAN/ENGLISH: Switch option for country-specific keyboards.
- With the **Preset Color** button, three different presets for the color scheme of displaying preset buttons can be called up.

1 RESET DEFAULTS button: Will reset all changes back to factory settings.

2 Set the query mode to create or overwrite cues.

3 PRESET FILTER ON /OFF:

FILTER ON: When saving a PRESET, **only** the functions of this feature (e.g. COLOUR) will be saved.

FILTER OFF: When saving a PRESET, **all functions** of the chosen fixture will be saved.

Preset, whether Cue Only will be ON or OFF when saving data.

Preset, whether set times of cues (FADE/DELAY) will be reset (RESET TIMES ON) upon the next saving process or whether they shall be maintained (RESET TIMES OFF).

4 Functions for data saving.

Active Values: Will save **only active** values (red background or red numbers/characters)

All: Will always save **all** values given on the output (DMX)

All for Selected Devices: Will save **all** values of the selected Fixtures and Dimmers (Fixture and Dimmer characters in yellow)

5 Encoder labelling for figures within the Cue Timing column.

2.15 Setting Sound Signals

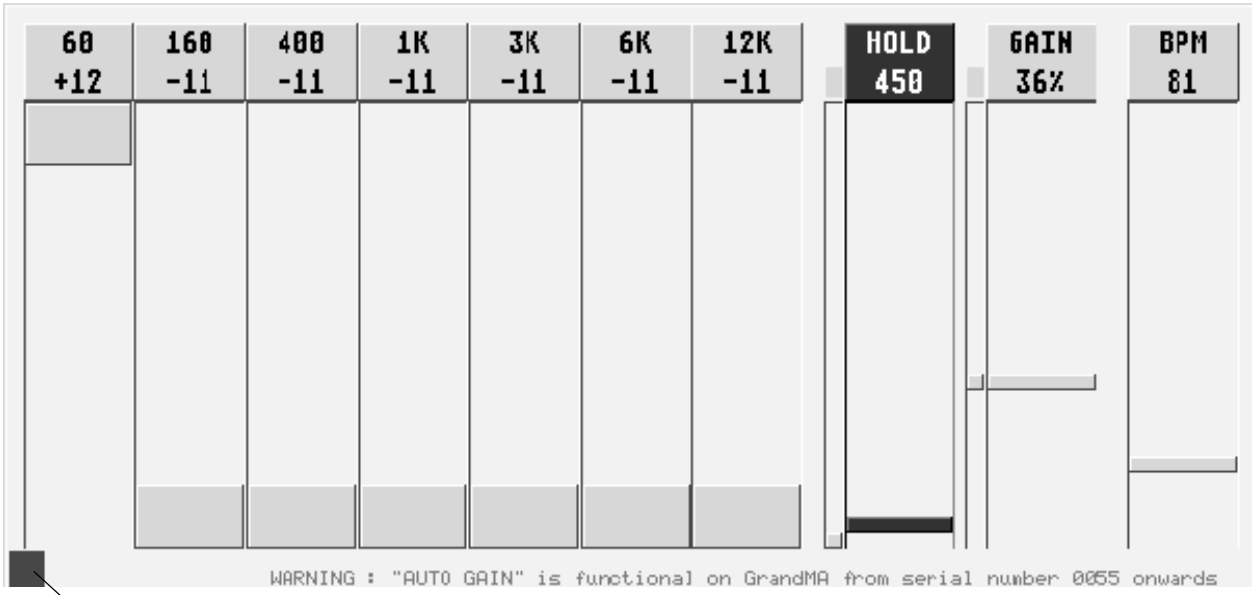
The sound signal is used for triggering Chasers and Sequences. In other words, this is an electronic, graphic equalizer. In order to slowly balance any fluctuations of the audio signal, a specific compressor function has been integrated.

Furthermore, you will find an integrated adjustable HOLD-OFF function. This function will prevent any double triggers (for example: with fast BASSDRUM beats).

Furthermore, beats will be automatically recognized via the incoming sound signal (BPM).

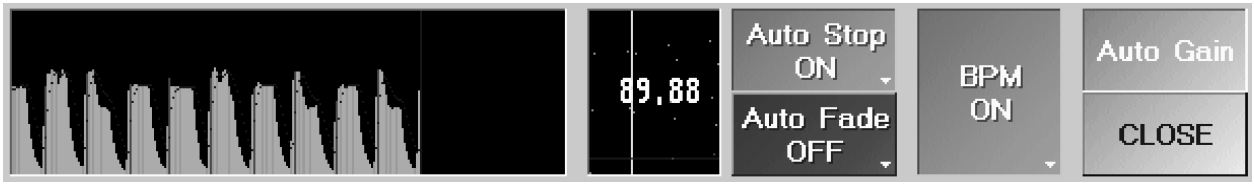
Press the TOOLS button once.

Call up this menu from the TOOLS menu using the **Sound Settings** button.



Trigger monitor

To set an equalizer, pull the respective "slider" to the desired position. In the left lower corner, there is a visual trigger signal (monitor) for your orientation. The small dot on the left side of the HOLD Function will indicate the remaining HOLD time. The small dot on the left side of the GAIN indicator will show the compression rate of the audio signal.



The right small dot will indicate the state of compression of the audio signal. The sound signal is visualized in the lower left part of the display. The analysis of the sound signal will be indicated in the smaller right part of the window, including indication of the recognised BPM (Beats per minute). By moving the BPM slider, the beat can be set. The next-possible beat will be recognised from the incoming audio signal and will be used to control the BPM.

If the BPM button is ON, the currently recognised beat will be used. When switching the BPM to OFF, the last recognised beat at the time will remain unchanged and will be used. You can adjust the value using the BPM slider.

If the Auto Stop button is on ON, the Chase or the effect will be stopped when there is no sound signal. If the Auto Fader button is also on ON, the Chase or the effect will be faded out when there is no sound signal.
When you switch the Auto Stop button to OFF, the Chaser or effect will continue with the latest BPM value measured.

The AUTO GAIN function can be used for *grandMA*s from serial no. 0055 and later (button will turn dark-grey button, HARDWARE modification). *grandMA* ultra-light allows **only** Auto Gain.

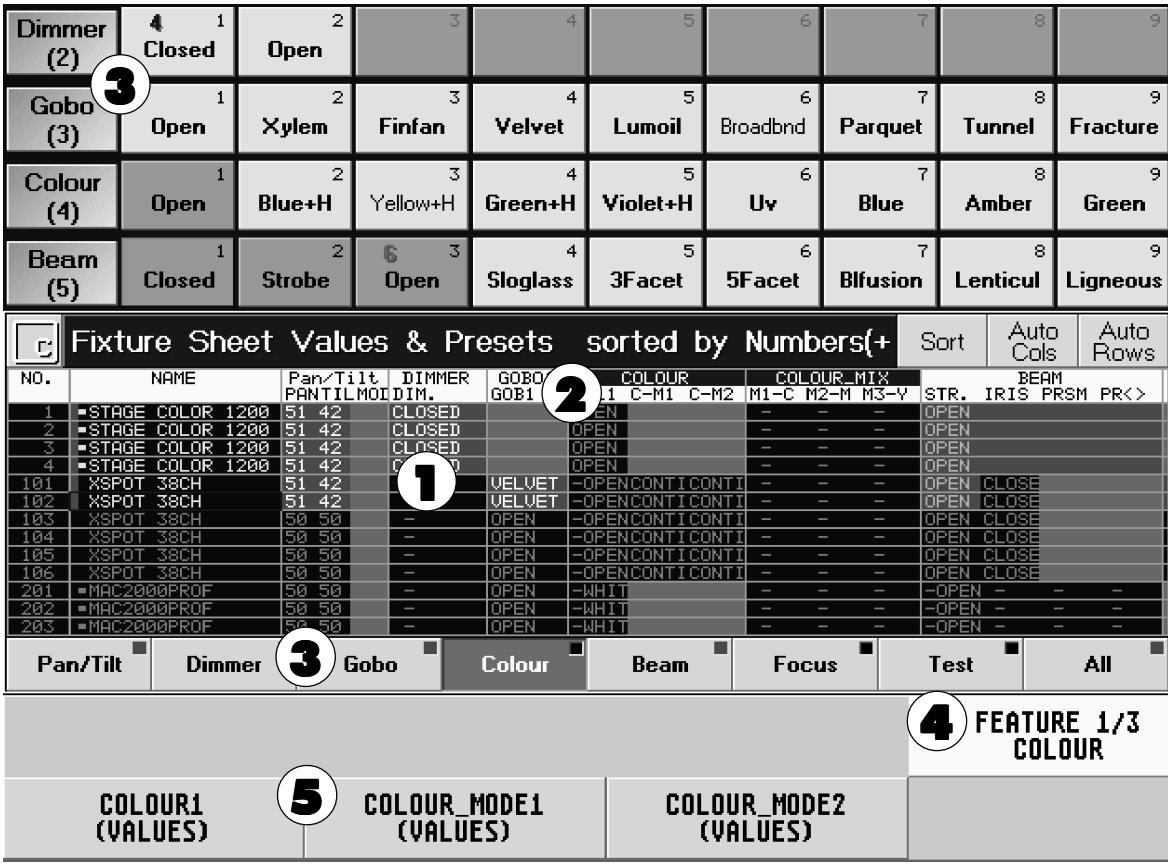
For *grandMA*'s with serial no. up to 0054, this button can *not* be used.

You can leave this menu by pressing the CLOSE button; all settings will be saved.

2.16 Adjustments in the ATTRIBUTE GROUPING menu

In the „Preset and Feature Assignment" menu, you can change the names of Preset and Features Groups. Furthermore, you can create or adapt new Features Groups.

But first a short explanation about the differences between Presets, Features and Attributes:



1 **Attribute:** Attributes are individual functions of Fixtures like Goborad1, Focus, Iris, Pan, Tilt ...

2 **Feature:** Features are groups, in which several Attributes are combined. In the Fixture Sheet, the first line will display all Features available. Below the individual Features, the respective Attributes are displayed.

3 **Presets:** In a preset, the value of one or more Attributes can be saved. Presets are divided in different Preset Groups (Gobo, Colour, ...).
Features are allocated to the individual Preset Groups.

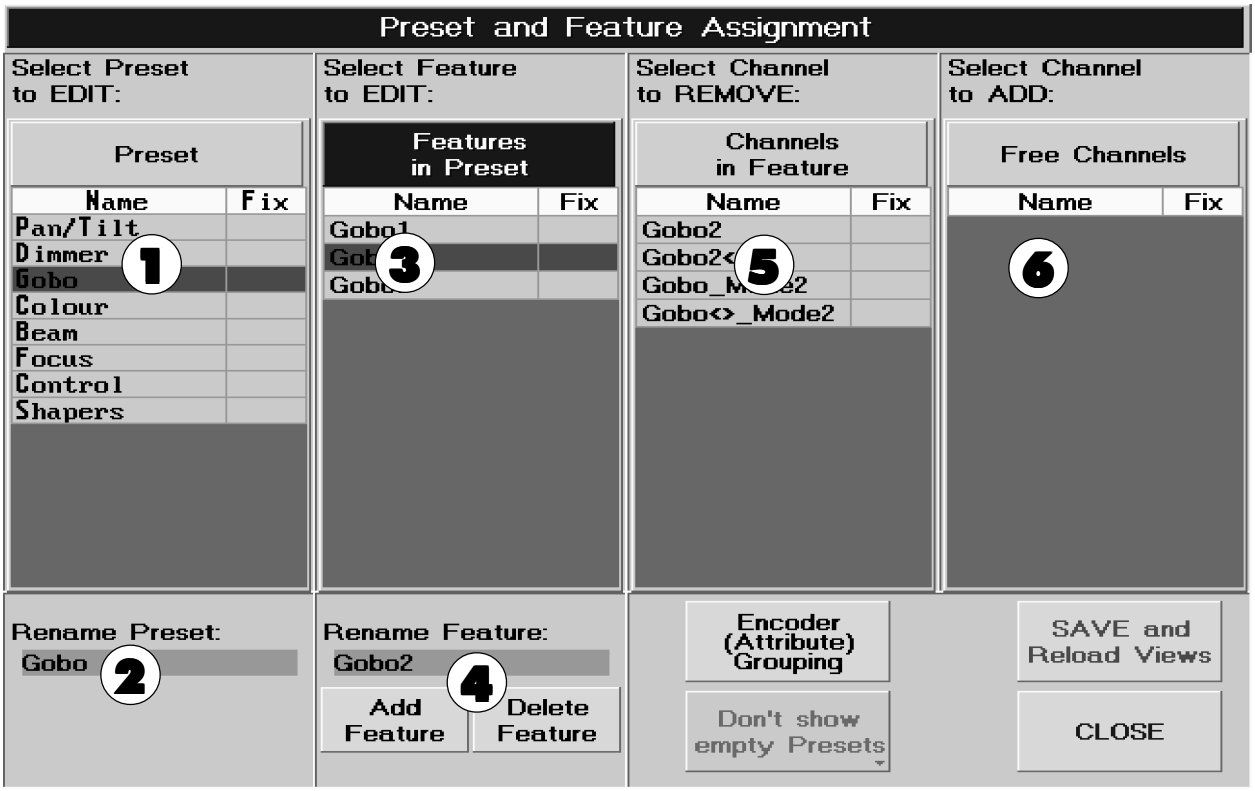
4 By pressing the FEATURE button, you can select the different Feature Groups for the Preset Group selected to change the individual Attributes using the Encoder.

5 Here, the individual Attributes are displayed that can be changed with the respective Encoder.

2.16.1 Preset and Feature Assignment

Attention! This menu is important and will influence the entire programming!

Call up this menu by pressing the Attribute Grouping button in the Defaults menu.



Changing the Names of Preset Groups

1 Click on a Preset Group.

2 Click on the name, change it using the keyboard and confirm with Enter. The name will only be changed and saved after pressing the SAVE and Reload Views button.

Changing the Names of Preset Groups

1 Click on a Preset Group.

3 Click on a feature of this Preset Group.

4 Click on the name, change it using the keyboard and confirm with Enter. The name will only be changed and saved after pressing the "SAVE and Reload Views" button.

Creating a Feature

By pressing the „Add Feature" button, a new Feature is created in the selected Preset Group. To assign a name to the created Feature ➡ see above, Changing the Names of Features

Deleting Features

By pressing the „Delete Feature" button, the selected Feature will be deleted. If there were still Attributes contained in the Feature, these will be made available automatically as Free Attributes.

Transferring Attributes into other Features

3 Click on a Feature of a Preset Group.

5 By clicking on an Attribute, this will be deleted from this Feature and be made available as Free Attribute.

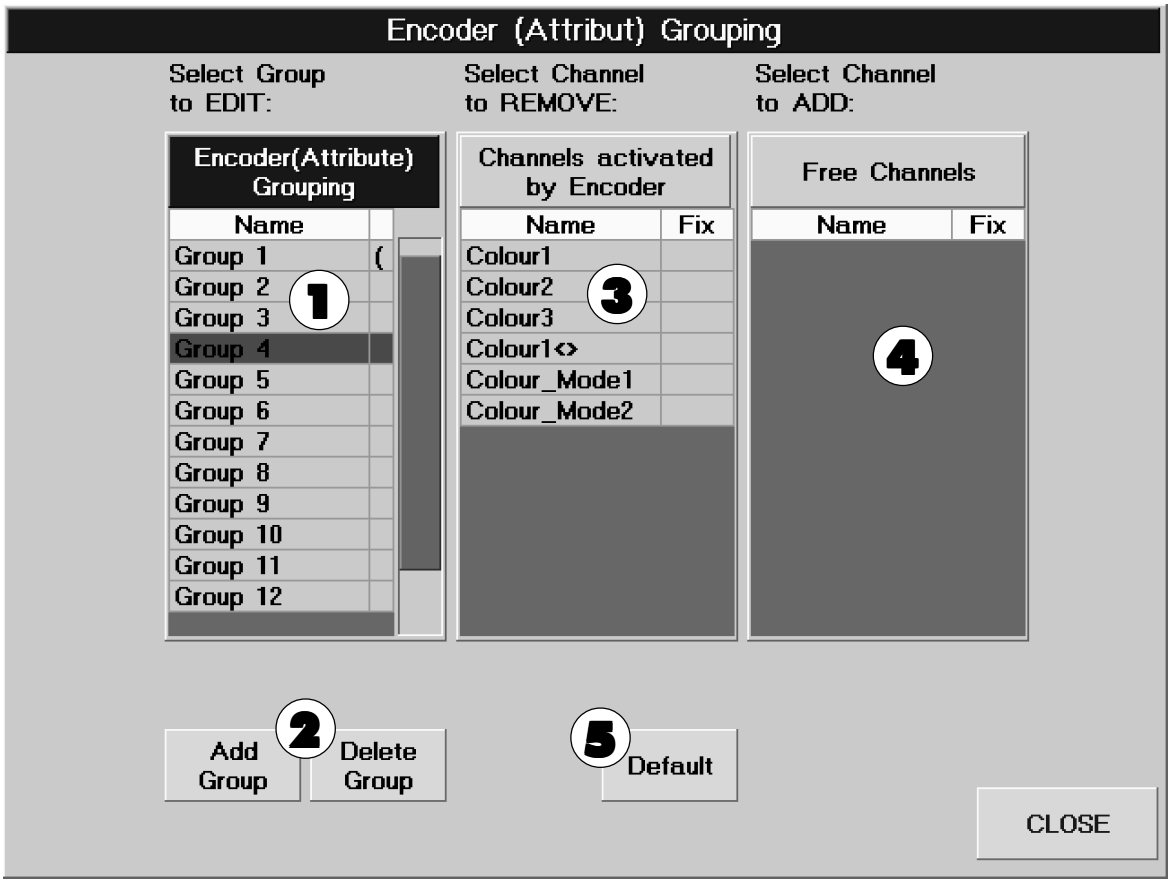
3 Now, select the Feature, into which a Free Attribute is to be saved.

6 By selecting an Attribute, this will be moved into the selected Feature.

Changes will only take effect and be saved after pressing the "SAVE and Reload Views" button.

2.16.2 Encoder (Attribute) Grouping

All settings within this menu will affect the saving of Cues, Presets and creating of Presets (Create Preset menu).
Call up this menu by pressing the „Encoder (Attribute) Grouping" button in the Preset and Feature Assignment.



The Attributes combined in a group will be activated and saved when they are changed (e.g. Pan and Tilt).

1 By selecting a group, the combined Attributes will be displayed on the right side.

2 Pressing the „Add Group" button will create a new group.
In order to delete a group, this group has to be selected first. Now, press the „Delete Group" button. The group will be deleted, the Attributes will automatically be added to the Free Attributes.

3 In this column, the Attributes of the selected group will be displayed. By selecting an Attribute, this will be removed from this group and added to the Free Attributes.

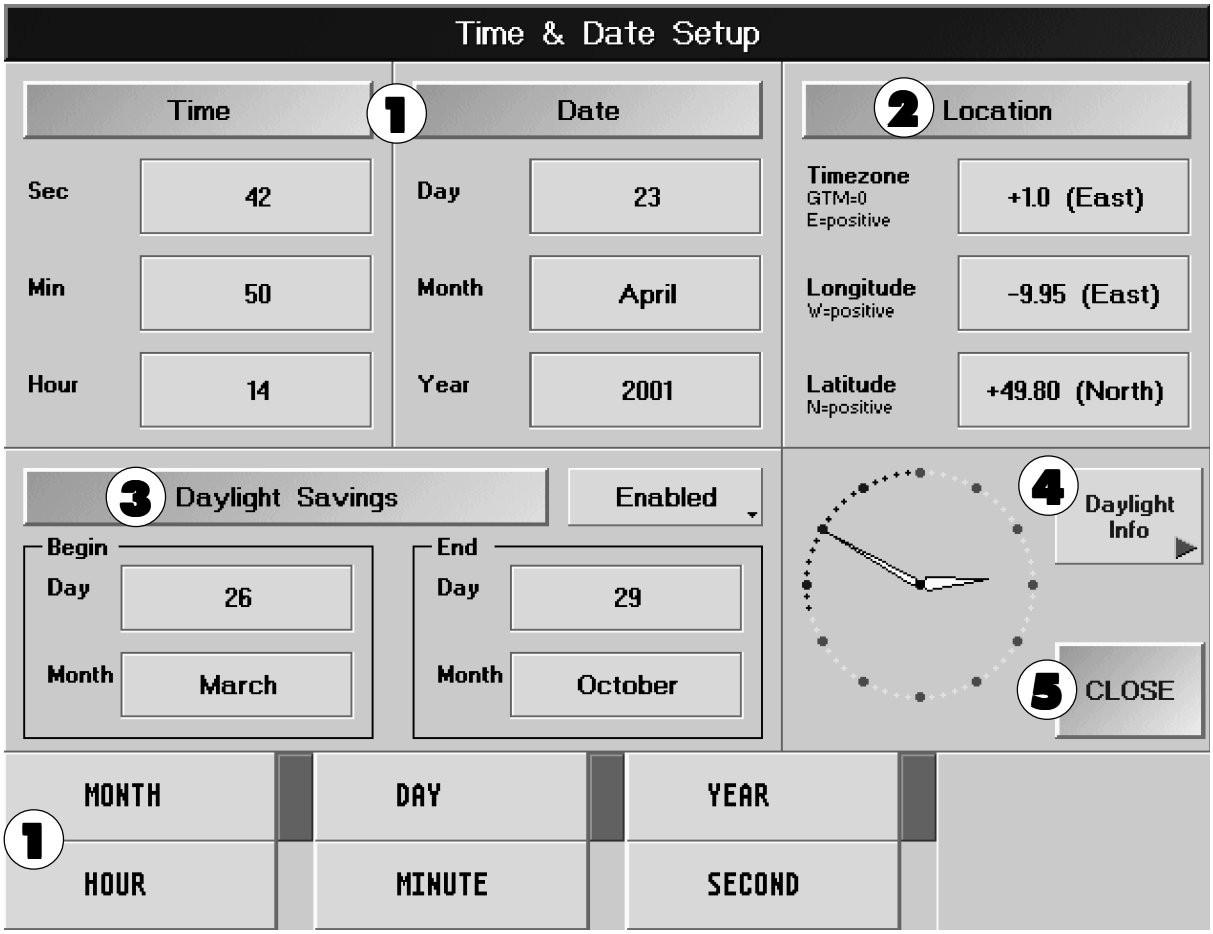
4 In order to assign Free Attributes to another group, this group has to be selected first. Selecting the Attribute will add it to the currently selected group.

5 By pressing the „Default" button, all groups except 3 will be deleted. Almost all Attributes will be displayed as Free Attributes in the right column. In the remaining 3 groups, the fixed Attributes (Pan/Tilt, Col.Mix1-4 and Blade1A-4B) are allocated. These Attributes can **not** be moved into other groups (indicated by "fix" next the Attribute's name).

With CLOSE, you can leave this menu. Changes will only take effect and be saved after pressing the "SAVE and Reload Views" button.

2.17 TIME & DATE Menu

Pressing the TIME and DATE button in the SETUP Menu will open the following menu.



1 You can set TIME and DATE with the encoders below the display. (You can switch encoder functions by pressing the encoder).

2 Set position for the automatic control of (➠ **8.3** Agenda Menu) sunrise and sunset calculation. Clicking on the respective buttons will open a window, where the position can be set.
Information regarding the respective position can be looked up in a software program that can be downloaded from the internet at: www.djuga.net/winglobe.html.

3 If the button is set to **Enabled**,the clock will automatically switch between summer and winter time. Pressing the button deactivates this function (Disabled). Pressing the respective button in the **Begin/End** field will open a window where you can set the begining and the end of the summer time.

4 Pressing this button will open a sheet, where the calculated times for Dawn, Sunrise, Sunset and Dusk for yesterday, today and tommorrow are listed.

5 Leave this menu with the CLOSE button.

2.18 User Management

2.18.1 Introduction

The new user management and security features include:

- Temporary simple desk lock mechanism.
- User management for up to 32 users.
- Users have privilege levels.
- These levels of privilege can prevent an inexperienced user from destroying show data.
- Users can have their own user profile.
- User profiles include views and default settings, even a set of default views that can be loaded into any show.
- Multiple users can share one user profile (although they can have different privilege levels).
- Forced login at desk start as an option.

When you get a new desk, or you update your old version:

All user management features are disabled by default. If you do not touch them, you will not notice a difference to the older versions of grandMA. Internally you will be automatically logged in as administrator, working with a default user profile.

The user management is not show-dependent. It is affecting all shows on your desk.

2.18.2 Locking the Desk

Locking the desk is a method to temporarily protect your desk against misuse from inexperienced users. It is not suitable for permanent protection.

Locking the desk is not affecting the output. All running programs continue to do so. But the complete surface of the desk is inaccessible. Eventual playing around with the master fader will be ignored.

Activating Desk Lock:

- Press CTRL-PAUSE on the PC-Keyboard
- All touchscreens will show DESK LOCKED.
- Desk is locked.

Deactivating Desk Lock:

- Press CTRL-PAUSE on the PC-Keyboard again.
- All touchscreens will restore to the original screens.
- Desk is unlocked.

CAUTION:

Due to the fact, that the master fader is not motorised, master dimming may jump to an unwanted level upon deactivation of desk lock. So have a look at it before you deactivate desk lock! For the *grandMA* ultra-light this is also valid for all other faders.

2.18.3 Concept of User Profiles

- The desk has a list of users.
- Each user can have his own user profile, but he can also share a profile with other users.
- A user profile includes views, quikey arrangement and playback settings.
- This part is used to store and load default Views, Setup and Default settings (Encoder and Trackball sensitivity and Wheel function ➡ **2.13** Settings in the Setup menu Furthermore Cue Timing, Executor Defaults, Sheet Sorting, Sheet Fontsize, Sheet Readout, Misc., Preset Colours, Attribute Grouping and Store Options ➡ **2.14** Settings in the DEFAULTS menu).
- Each show contains a full set of local user profiles. These local user profiles can be stored as default in the global parts and they can be loaded from there.
- When saving a show on floppy disk, all users registered to this console will also be saved with all default settings. When loading a show from floppy disk to another console, all users including all default settings will automatically be transferred to the new console. Individual users can use these profiles for a particular show or for other shows in which this console is used.

2.18.4 Creating a new User

To create a new user, you need to have administrator privilege level:

- Go to TOOLS menu.
- Go to USER / CONFIGURATION.
- Press the NEW USER button.
- You will be asked for a unique new user name. After you have entered the name, a new user appears in the list.
- Edit the full name for the new user. The full name should differ from the user name, because it is shown public in the headline of the tools menu, while the user name is only used for login.
- Change the rights (privilege level) for the new user.
- By default, the new user is using the DEFAULT user profile. If the user should use a different or an independent user profile, change his user profile. If you create a new user profile in this way, it is initialised with the default profile.

Beside the users which are in the list, there is always one hidden administrator.

You can not delete or change this administrator.

His user name is **ADMIN** and he is using the DEFAULT user profile.

Login becomes enabled if at least one user is in the visible user list.

Of course the presence of the ADMIN is destroying a real security concept. But on the other hand you will never really lose access to your desk.

2.18.5 Deleting a User

To delete a user, you need to have administrator privilege level:

- Go to TOOLS menu.
- Go to USER / CONFIGURATION.
- Select the user you want to delete.
- Press the DELETE USER button.
- The user will disappear. If he was the only one to use a certain user profile, this profile will also be deleted.

Please note, that you can not delete yourself from the list.

2.18.6 User Rights

To change the rights (privilege level) of a user, you need to have administrator privilege level:

- Go to TOOLS menu.
- Go to USER / CONFIGURATION.
- Edit the RIGHTS field of the respective user you want to change.

Please note, that you can not change your own rights (simply because you are in the User Manager menu, you already have administrator rights. If you would change that, you would lock yourself out from this menu.)

At the moment, the following privilege levels are implemented:

PLAYBACK:

- User can use all playback functions.
- He can load shows.
- He has no access to any function that would change the show, beside from playback parameters.
- Even if he has changed playback settings, the show will not be saved. In this way, the next time the desk starts or the show is loaded, everything is as it was before.

PROGRAMMING:

- User has full access to all functions, except User Management and Desk Software Update.

ADMINISTRATOR:

- Beside all other functions, User Management and Update of Desk Software are enabled.

Some grandMA operators may find it helpful to create a user with playback rights only, for their own personal use. After they have finished programming, during the real show, they log in as this playback user, so they can be sure not to change anything in their precious show data (of course they should save their show before they log in as playback user!).

It is not necessary to save the whole desk after you have changed something in the User Manager. All data of the User Manager is immediately saved when you leave the User Manager menu!

2.18.7 Login

Login is only enabled if at least one user appears in the user list (TOOLS menu / User Configuration).

To do a manual login:

- Go to TOOLS menu.
- Press LOGIN button.

Never push Login without knowing the password! Otherwise you can only log in by "ADMIN".

All touchscreens will show LOGIN, and you have to enter a valid user name.

During LOGIN, the surface of the desk is locked.

LOGIN does not affect playback. All running programs continue to do so.

After a successful login, the views of the corresponding user profile will appear on the screens. Furthermore, the user's saved setup and default settings will automatically be loaded, too.

If a user loads a certain show for the very first time (he has never used this show before), this show will be loaded with the previously used profile and NOT with his personal user profile. If needed, the personal user profile can be loaded afterwards.

2.18.8 Save or Load User Profiles (Default)

Individual user profiles are saved independently from the show and can thus be loaded for any other show afterwards.

- Go to the TOOLS menu.
- Pressing the button LOAD USER DEFAULTS will load your own profile (current settings will be overwritten).
- Pressing the button SAVE USER DEFAULTS will save current settings into the independent user profile (Default). This profile can now also be used in other shows.

2.18.9 Forced Login at Desk Start

Forced Login is only enabled if at least one user appears in the user list (TOOLS menu / User Configuration).

To change the Forced Login setting, you need to have administrator privilege level:

- Go to TOOLS menu.
- Go to USER / CONFIGURATION.
- Press the FORCE LOGIN AT DESKSTART button.

If you switch on FORCED LOGIN, upon every desk start or loading of a show, the desk will automatically bring up the login screen.

If FORCED LOGIN is switched off, upon desk start the desk will automatically login the user who was last logged in.

2.18.10 Who is logged in at the moment?

- Go to TOOLS menu.

- Look at the title.

It says "TOOLS MENU, current user is ...".

The name that you see there is the public full name of the user currently logged in.

Please note that the short user name, used for login, may (and should) be different from this full name.

3 Creating a Show

3.1 CREATING A WINDOW

1 Click into an "empty" space on one of the three TFT displays or the external monitors. The CREATE A WINDOW menu will open.

3.1.1 Listing of individual windows and functions

CLEAR ALL: Erases all windows on this screen/monitor.

CHANNEL: This window will display dimmer channels as figures. You have direct access to channels and values here. ➡ **3.5** Accessing Dimmer Channels directly

EXECUTOR: Within this window, you will have the option to display a sequence, which is assigned to an EXECUTOR fader or an EXECUTOR button. Among other options, this is where global times can be changed also. ➡ **5.3** EXECUTOR window

FADER: Selected dimmer channels can be displayed as either bar or figure within this window. Here you will also have direct access to channels and values. ➡ **3.5** Accessing Dimmer Channels directly

FIXTURE: Displays all fixtures plus the various functions, values, status etc. Here you will have direct access to the fixtures, functions and values. ➡ **3.4** Accessing Fixtures directly

TRACKING: In this window you can display a Sequence that is assigned to an EXECUTOR fader or EXECUTOR button. Here, as opposed to the EXECUTOR Sheet, all values or times can be displayed separately. Any value/time can be modified separately for any channel. ➡ **5.4** TRACKING window

DMX: In this window, all DMX output channels are displayed as values, like they are actually patched. ➡ **2.6** DMX Output window

GROUPS: Displays, creates new, edits and calls up fixture and dimmer groups. ➡ **3.3** Creating and Calling up Fixtures and Dimmer groups

SEQUENCE: In this Pool, all created Sequences are displayed. This way, assignments to Executors can be made very quickly. Here, the Sequences can be renamed, copied and deleted. ➡ **5.1** ASSIGN menu

EFFECTS: Displaying and Calling up Effect Groups. ➡ **6** Effects

FORMS: In this POOL, all created forms will be displayed. Here, you can rename, copy or delete forms. ➡ **6.7** Creating and Saving Virtual Forms (EDIT FORMS)

MACROS: Indicates and calls up macros on the displays. ➡ **8** Macros and QUIKEY

VIEWS: Displaying and Calling up Views. ➡ **3.2.2** View Pool

QUIKEY: Displaying and Calling up control buttons on the displays. ➡ **8** Macros and QUIKEY

COMMAND LINE: Here, the executed commands are listed with their respective names. This is also, where the commands can be entered. ➡ **9** Command Line

CLOCK: Display window for the analogue or digital clock. Switching by pressing the ANALOG button.

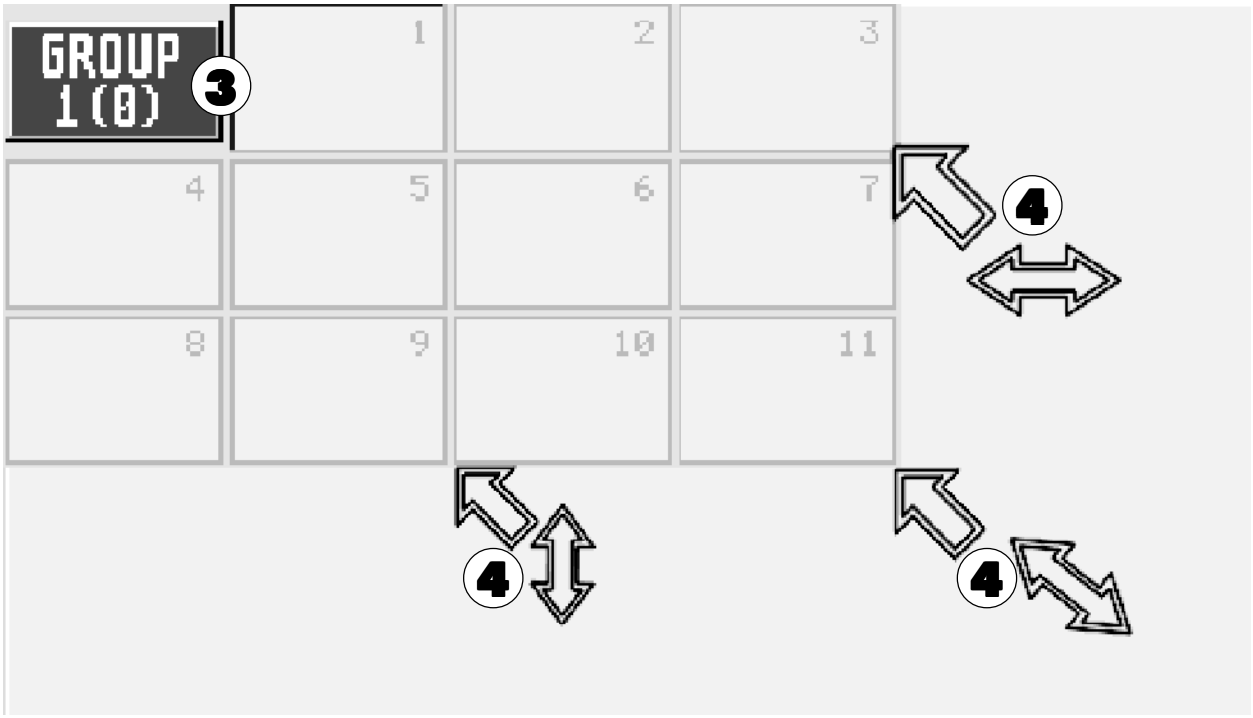
AGENDA: Here, you can create automatic controls depending on TIME/DATE or SUNRISE/SUNSET. ➡ **8.3** Agenda menu

DESK STATUS: Displays the current software versions:
VXWORKS: operating system with date
GrandMA: main program with date. If this line is displayed in green, the unit supports 4096 DMX channels
IO SUBSYSTEM: program for the second integrated computer (Motorola), internals, system load, etc.

TIMECODE: Recording, Playing back, Editing and Saving SMPTE LTC Timecode controlled operations. ➡ **7.1** Timecode

PAN / TILT, DIMMER, GOBO, COLOUR, BEAM, FOCUS, CONTROL, SHAPERS and ALL: Creates new, edits and calls up individual PRESETS with name and number. ➡ **3.7** Creating and Calling up Presets

2 Select the window or function to be created with a left mouse click.



3 If you wish to move the newly created window, hold the window border with the left mouse button and move the window.

4 There are 3 ways to enlarge a window: Move the cursor carefully to the lower or right border or corner, until you will see a small double-arrow next to the cursor. Now press and hold the left mouse button. By moving the mouse, the window can now be zoomed according to your requirements.

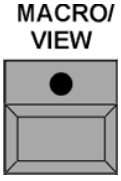
The most effective way to work with the grandMA is using the touchscreen and the encoder which is located next to the respective display.

3.1.2 Deleting a window

Press the DELETE button once. Click on the title bar of the window.

Or:

Click the headline with the right mouse button. In the next window, confirm with YES or DELETE.



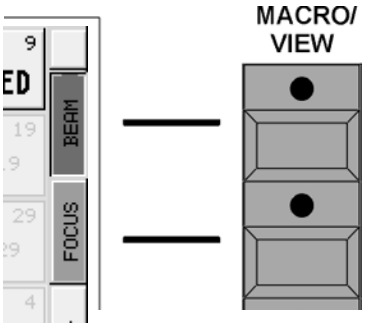
Or:

When pressing the uppermost and lowermost VIEW buttons simultaneously, all windows on this TFT display will be deleted.

3.2 Saving VIEWS

The VIEW buttons on the touchscreens or the external monitors can be assigned with various views.

The buttons located beside the screens can be used for direct access to the VIEW buttons on the screens.



What can a button (key) be used for?

- You can save **one or more** displays on it,
- you can save **all** currently created windows on **all** screens and both external monitors on it,
- or you can save a Macro function ➠ **7.1** Creating Macros

1 Organize a display or monitor ➠ **3.1** CREATING A WINDOW

2 Press STORE button once (STORE LED is on).

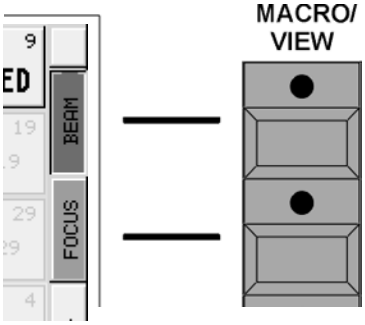
3 Press VIEWbutton or VIEW key once. The SELECT VIEW window will open.

4 Enter a name for the VIEW using the keyboard. The new name will be displayed in the top line.

5 By pressing the buttons 1–5 (selected button will turn dark-grey), select the display to be saved.

Pressing the button ALL SCREENS will save ALL displays on one view button.

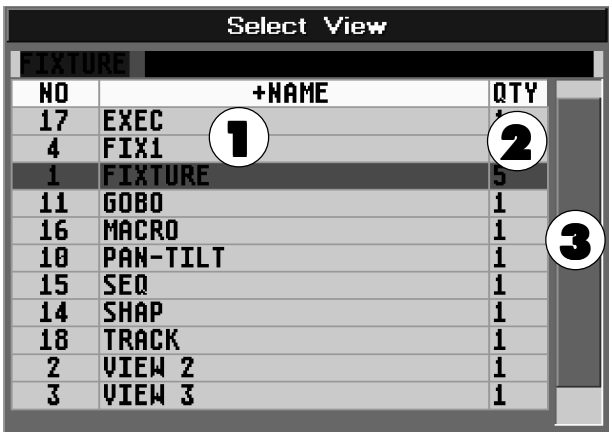
6 With the OK or ENTER button you can save and assign the view to the view button.



3.2.1 Assigning VIEWS

All created views can by assigned to any view button.

Click on the view button with the right mouse button. The window SELECT will appear. In this window, make a left click on the VIEW button. Now, the window SELECT VIEW will appear:



1 The table shows all created VIEWs with their names.

2 The QTY column shows the number of saved displays and external monitors for the individual VIEWs.

3 Scrolling is possible by dragging the scrollbar on the right side.

4 Selecting a VIEW in the table will assign this view to the chosen button.

3.2.2 View Pool

In the View Pool, all created Views are displayed and can be called up directly by selection.

3.3 Creating and calling up Fixtures and Dimmer GROUPS

Important and frequently used combinations of fixtures and dimmer channels can be saved in groups (currently max. 999 pcs.).

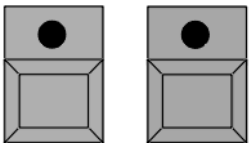
3.3.1 Creating fixture or dimmer groups

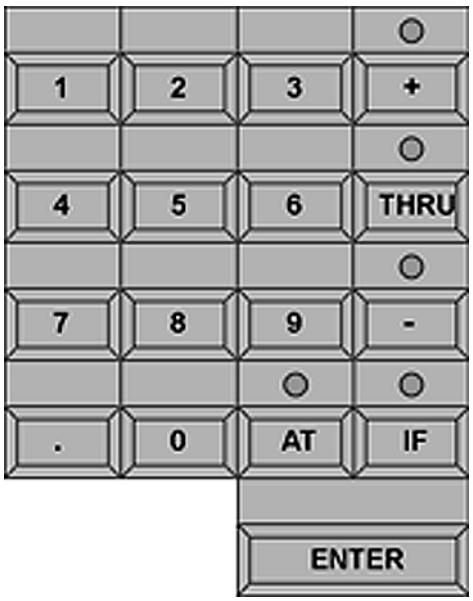
Create a GROUP window on one of the TFT touchscreens. ➠ **3.1** Creating a Window

- Use the touch screen or make a left mouse click on the individual Fixture within the FIXTURE SHEET or click on the Dimmer channels in the CHANNEL or FADER SHEET.

The **selected** scanners or dimmer channels of a selected group can be called up one by one in a certain sequence. In selected groups, the individual Fixtures or Dimmer channels can be selected in a specific order one after another. When selecting Fixtures or Channels for a group, make use of their order in which, after calling up the group, they are to be separately switched by using the NEXT/PREV button.

FIXTURE CHANNEL





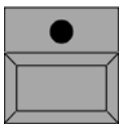
Or:

- Press the FIXTURE button for a fixture group or the CHANNEL button for dimmer groups (LED is on).

  Pressing the ENTER key shortly will lock the Fixture or Channel in the Command Line.
- Enter the number of first fixture or dimmer channel, using the numeric keypad.
- Now you can select the fixture or dimmer channel with the respectively following number by using the "+" key.
- The THRU key on the numeric keypad will select all fixtures and dimmer channels **from... to** including the last number entered.
- Using the "–" key, the fixture/dimmer channel with the following input number will **not** be selected.
- Confirm with ENTER; the selection will be processed.

The **selected fixtures** or channels will be displayed in the FIXTURE or CHANNEL window, and given in yellow characters.

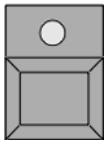
STORE



Press the STORE button once (LED within the button is on). Using the touchscreen or left mouse click, select the desired group button on the display containing the GROUP window. The selected fixtures are now saved to this group (STORE LED is off).

You can now name this group, using the keyboard. Enter the names or descriptions and confirm with ENTER.

CLEAR



Press the CLEAR button once. This erases the selected group of fixtures and dimmer channels.

For further groups, simply repeat all steps.

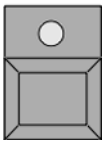
➠ **2.10** Creating presets, effects and group buttons automatically

3.3.2 Calling up groups

Groups can be called up by:

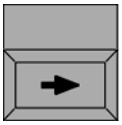
- A left mouse click
- Direct touch on screen
- Pressing the GROUP button once, entering the preset group number with the keyboard and confirming with ENTER.
- Press the GROUP button once. Pressing the ENTER key once will lock GROUP as preset in the Command Line. Then, enter the group number on the numeric keypad and call it up pressing ENTER.

CLEAR



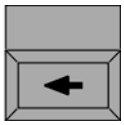
By pressing the CLEAR button once shortly, all selected Fixtures and Channels are deleted (displayed in yellow).

Proceed as follows to separately activate selected Fixtures/Dimmers or called-up groups in the desired/stored order:



NEXT button once within a group or selection: forwards

PREV



PREV button once within a group or selection: backwards

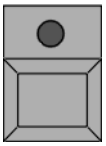
Pressing the SET button once reselects all Fixtures and dimmer channels in the group.

If there are more groups than can be displayed in the respective GROUP window, you can scroll within every "active" window (title bar in dark blue) on every screen by using the encoder wheel down on the right.

3.3.3 Moving GROUP buttons within a window

MOVE

Press the MOVE button once (MOVE LED lights up).

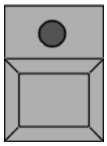


Using the touch screen or left mouse button, click on the GROUP button and hold it down (a small hand appears). Move the button to the another positon within this window and release it there.

You can also insert Group Buttons.

MOVE

Press the MOVE button twice (LED is blinking).

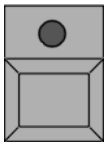


Using the touch screen or left mouse button, click on the GROUP button and hold it (a small hand appears). Move the button to required position between the other buttons in this window and release it. All following buttons will be moved by one position to the right.

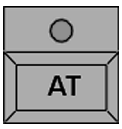
3.3.4 Copying groups

COPY

Press the COPY button once (LED is on).



Select the Group Buttons in the GROUP window. By selecting several groups one after the other, that set of groups can be copied together.



Press the AT button once (LED is on).

Click on the position for the copied group in the GROUP window.

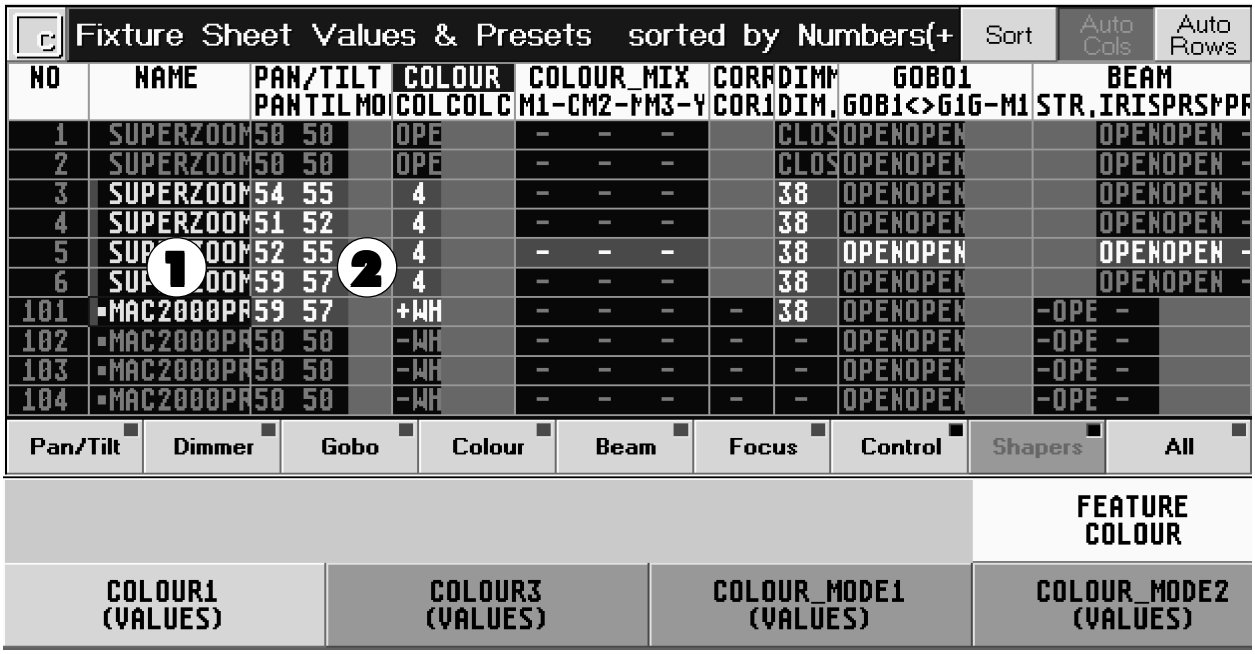
Confirm with ENTER.

The functions Move, Copy or Delete should also be used for Executors, Pages, Sequences or Effects.

3.4 Accessing Fixtures directly (in the FIXTURE SHEET)

The individual fixture functions can always be accessed directly. Several fixtures can be controlled simultaneously by one function. The selection will determine which fixtures will react to Direct Access procedures (selected fixtures will be marked in yellow writing in the FIXTURE window).

Within the FIXTURE window, you can locate, select and execute all functions of all visible fixtures.



1 Select the fixtures, where you wish to modify a value (the selected fixtures will be displayed in yellow characters).

Selection:

- Call up a fixture group. ➠ **3.3** Creating and calling up Fixtures and Dimmer GROUPS

or:

- Select fixtures using the touchscreen.

or:

- Select fixtures by using the Fixture button and the numeric keypad. ➠ **3.3** Creating and calling up Fixtures and Dimmer GROUPS

or:

- A left mouse click on the individual fixtures.

2 Select the requested function by clicking on the button. Switch on the Preset Control Bar ➠ **3.4.7** Options in the Fixture Window.

The values can now be changed via the encoders, located below the right TFT display (all functions of the encoders will be displayed directly on the screen; pressing the encoder will switch over).

The various groups can now be selected by pressing the FEATURE button.

or:

The Trackball affects the PAN/TILT function only (if switched on).

or:

The wheel affects dimmer values only.

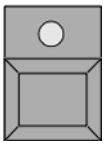
or:

Make a middle mouse click on the requested function and **hold it**. You can change the value by moving the mouse while holding the middle mouse button.

For saving the settings ➠ **4** Cues and Sequences
For creating Presets ➠ **3.7** Creating and calling up Presets
To call up or create Effects ➠ **6** Effects

If you wish to modify the selection **or** the activated values of the fixtures:

CLEAR



- Press the CLEAR button:

  When pressing the CLEAR button the **first** time, the selection of fixtures will be deleted from the OUTPUT window (yellow characters turn grey).

The **modified** values will be kept and displayed with red background.

- Press the CLEAR button again:

  When pressing the CLEAR button the **second** time, the activation of modified values will be canceled (red background).

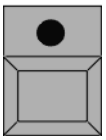
- Press the CLEAR button one more time:

  When pressing the CLEAR key the **third** time, all modified values will be reset (default or to their original setting prior to the activation).

After pressing the CLEAR button for the first time, the yellow LED in this button will flash. This means that only the selection was deleted. When you select other fixtures or dimmer channels now, the yellow LED will not flash anymore.

The selection of single fixtures can also be deleted.

OFF

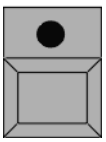


Press OFF button 1 x (LED is on).

Click on the Fixture button in the Group Window or on the Fixture Name in the Fixture Sheet.

You can also delete activated values of single fixtures (Output will be set to Default or activated cue value).

OFF

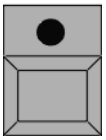


Press OFF button 1x (LED is on).

Click on the activated value in the Fixture Sheet.

You can also delete activated values of entire function groups of selected fixtures (Output will be set to Default of activated cue value).

OFF



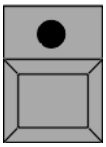
Press OFF button 1x (LED is on).

Press a button for the respective function on the Preset Control Bar or click on that function within the Fixture Sheet.

3.4.1 The ALIGN Function

The ALIGN function allows you to use four different **modes** of changing values.

ALIGN



ALIGN button pressed once (LED is on).

When changing activated values, the value of the first selected Channel/Fixture will be taken as starting value (will not be changed), while the value of the last selected Channel/Fixture value will be the one modified most, and all values in between will be distributed evenly.

ALIGN button pressed twice (LED is on).

When changing activated values, the last value of the last selected Channel/Fixture will be taken as first value (will not be changed), while the value of the first selected Channel/Fixture will be the one modified most, and all values in between will be distributed evenly.

ALIGN button pressed 3 times (LED is on).

When changing activated values, the value of the selected Channel/Fixture value "in the middle" will be taken as first value (will not be changed). The value of the first and last selected Channel/Fixture will be the ones modified most, and all values in between will be distributed evenly.

ALIGN button pressed 4 times (LED is on).

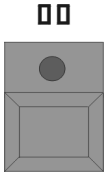
When changing activated values, the middle value will be the one modified most, the values on the left and right will not change, and the values in between will be distributed evenly.

3.4.2 PAUSE Function

With the Pause Function you can temporarily freeze entire fixtures or just single functions of fixtures. After activation of the Pause Function, no further changes will be put out at the DMX output. But you can still change and save fixtures or single functions internally.

You can park single fixtures with all functions. Parked fixtures are displayed with a blue background.

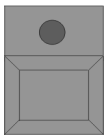
Press PAUSE button 1x (LED is on).



Click on fixture or fixture button in the Group Window or click on fixture in the Fixture Sheet.

You can also park single functions of the fixtures. Parked fixtures are displayed with a blue background.

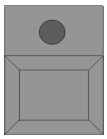
Press PAUSE button 1x (LED is on).



Click on the functions in the Preset Control Bar (Switch on Preset Control Bar ➡ **3.4.7** Options in the Fixture Window) or directy in the Fixture Sheet.

Parked fixtures or functions can be released again either all together or individually.

GO + Press GO+ button 1x (LED is on).



Click on fixture or fixture button in the Group window or click on fixture in the Fixture Sheet.

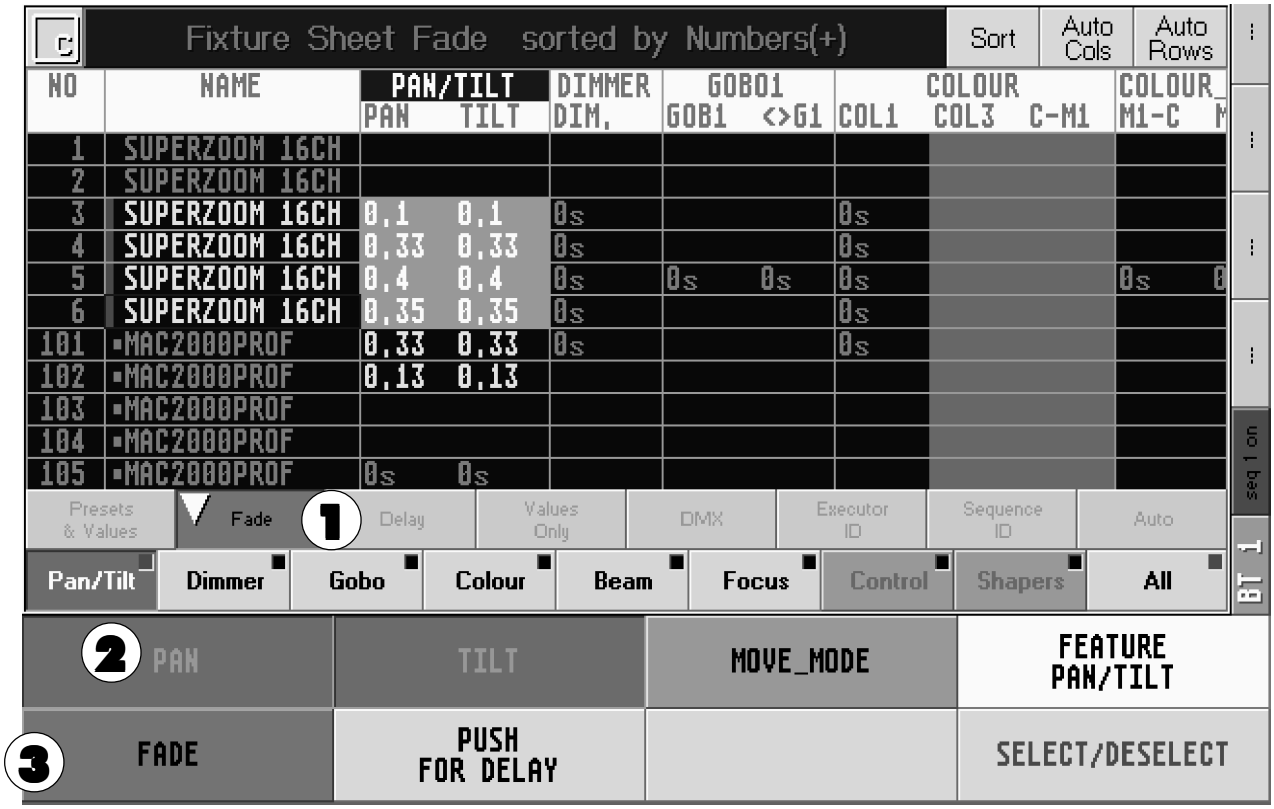
or:

Click on the functions within the Preset Control Bar or directly in the Fixture Sheet.

3.4.3 FADE and DELAY times in the FIXTURE window

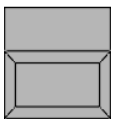
Additionally to the standard (Basic) FADE and DELAY times, individual durations can also be set for the individual functions in the FIXTURE window.

You will need these settings when creating Cues, in order to be able to work with different FADE or DELAY times for individual functions.



1 Press the FADE or DELAY button (switching on the control bar ➡ **3.4.7** Options in the Fixture window).

Or:



If the AUTO button is pressed (on the control bar or in the options, Switching on the Control bar. ➡ **3.4.7** Options in the Fixture window), when pressing the TIME button once, the fixture sheet will switch to **FADE** time mode. The second time, the fixture sheet will switch to DELAY time mode.

If the AUTO button is not pressed, the display will not switch over. The currently selected FADE or DELAY function will be displayed by an arrow on the Command Line control bar. ➡ **9** Command Line

2 Choose a function, where you wish to program a time, other than the Basic time. You will find a button for each function, displayed above the Encoder descriptions. By pressing these buttons (buttons will turn dark-grey), you can select, which functions shall be affected by the change.

The various function groups can be selected by pressing the FEATURE button.

Using the SELECT/DESELECT button or by pressing the encoder on the right, you can either select all buttons (dark grey) or erase them (light grey).

Now you can modify the IND. FADE time or IND. DELAY time (individual Fade/Delay Times) for the selected fixtures using the left encoder.

Pressing the button PUSH FOR DELAY/FADE or pressing the second Encoder you can switch between IND. DELAY time and IND. FADE time.

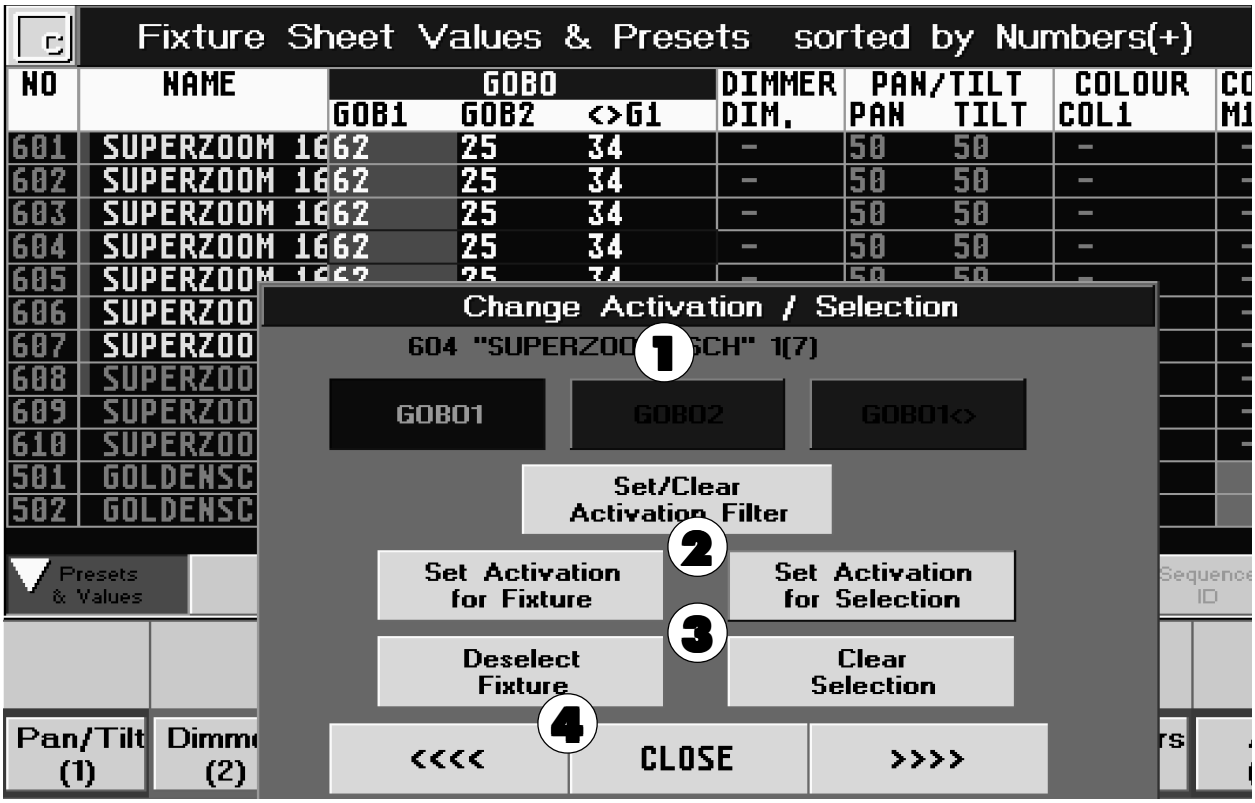
3.4.4 Selecting individual Values

When saving settings, active values can also be saved. These values are indicated by a red background or by red numbers.

By default, functions are activated together. ➡ **2.16** Settings within the ATTRIBUTE GROUPING menu

In order to split the activation for a function once, make a right mouse click on the **set activation** (red background) **before saving** it.

This will open the **Change Activation/Selection** window.



1 Functions, which are **not** supposed to be saved, need to be switched off via the respective buttons (buttons will turn from dark-gray to light-gray).

2 With the **Set Activation for Selection** button, the activation is separated for all selected Fixtures.

With the **Set Activation for Fixture** button, the activation for the individual Fixture (number and name being displayed by the function buttons) is separated.

When saving, the individual active value is now being saved.

3 With the **Deselect Fixture** button, the individual Fixture is deselected. With the **Clear Selection** button, all selected Fixtures are deselected.

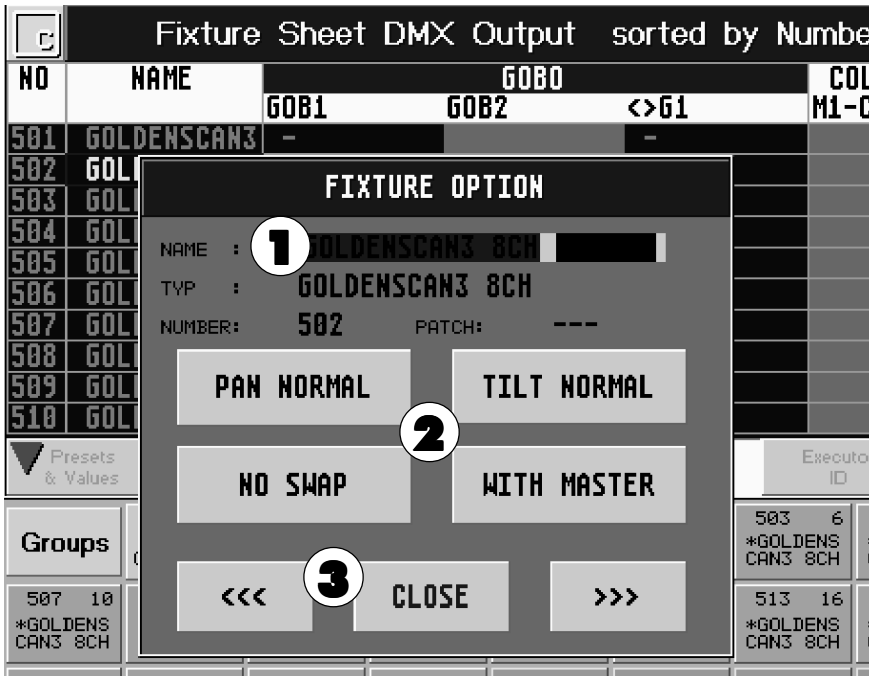
4 With the <<<< button, you can switch to the previous Fixture (number and name will be displayed above the function buttons). With the >>>> button, you can switch to the next Fixture.

With the CLOSE button, you can close the window.

3.4.5 FIXTURE OPTION

In the Fixture Sheet, you can adapt different basic settings for each individual Fixture.

Make a right mouse click on the Fixture. The FIXTURE OPTION window will open.



1 The Fixture can be renamed using the keyboard.

Next to TYPE the type of Fixture is displayed, next to NUMBER the corresponding number, and next to PATCH the patched channel for this Fixture.

2 Pressing the PAN NORMAL button (display changes to PAN INVERSE) will invert the output of the PAN function.

Pressing the TILT NORMAL button (display changes to TILT INVERSE) will invert the output of the TILT function.

Pressing the NO SWAP button (display changes to SWAPPED) will invert the output of the PAN and TILT functions.

Pressing the WITH MASTER button (display changes to NO MASTER), the Dimmer value will be output without regard to the set GRANDMASTER.

If a Fixture was modified in this window, the Fixture's name will be displayed on a blue background in the Fixture Sheet. These changes can also be set while patching Fixtures. ➡ **2.4** Selecting DMX addresses for Fixtures

3 With the <<< button, you can switch to the previous Fixture. With the >>> button, you can switch to the next Fixture.

With the CLOSE button, you can close the window.

3.4.6 AUTO-SORT Function in the FIXTURE Window

Pressing the „Auto Cols" button (dark background) will move the function column, for which the value is being changed, automatically to the left.
Selecting Presets **or** functions in the Preset Window (➡ **3.7** Create Presets) will move the respective column in the Fixture Window to the left.

Pressing the „Auto Rows" button (dark background) will move up those fixtures, selected via groups or directly by fixture button and numeric keypad.

3.4.7 SORT Function in the FIXTURE Window

Pressing the SORT button will update the sorting (➡ right) in the Fixture Window.

3.4.8 Options in the FIXTURE Window

Touch the touch screen on the left corner of the title bar.

Or:

Proceed with a right mouse click on top line.

The FIXTURE SHEET OPTIONS window will open.

LAYER TO DISPLAY: By pressing the respective button, the following values will be displayed as basic setting.

- Preset Values: The FIXTURE window will show the presets or values.
- Fade: FADE times will be displayed.
- Delay: DELAY times will be displayed.
- Values Only: Only the values will be displayed.
- DMX: The DMX output values will be displayed.
- Id Executor: The Executor's number and page will be displayed.
- Id Sequence: The sequence's number and the respective Cue will be displayed.
- Auto: If this button is pressed, the display will automatically toggle between the different options when swapping with the TIME button.

FONT SIZE: By pressing this button, you can choose between LARGE or SMALL characters in the FIXTURE window.

SORT BY: With the respective button, you can determine according to which criteria the fixtures within the column are to be sorted.

- Numbers: Fixtures will be sorted by numbers in the FIXTURE window.
- Names: Fixtures will be sorted by name.
- Selected Devices: The **selected** Fixtures will be moved upwards.
- Active Values: Fixtures for which a value is **activated**, will be moved upwards.
- Dimmer Values: Fixtures will be sorted according to highest dimmer value.
- Sort Ascending: Sorting by ascending values.
  Sort Desending: Sorting by descending values.

READOUT: Pressing this button, you can switch between the following display options.

- %: Values will be displayed as percentages.
- % +: Values will be displayed as percentage values; interim values will be displayed next to the figure in form of 3 dots.
- DEC: Values will be displayed as decimal numbers (0–255).
- HEX: Values will be displayed as hexadecimal numbers (0–FF).

When pressing the Show Layer Control button (displayed in dark gray), a control bar will be displayed below the Fixture. By pressing the respective buttons on the control bar, the display in the window will switch to the respective value.

When pressing the Show Preset Control button (displayed in dark grey), a control bar will be displayed below the fixtures. Each function has its own button. The respective function will be activated by pressing the single buttons in the control bar. It can be modified using the encoder. By pressing the FEATURE button (above the right encoder), you can select the various function groups.

A small rectangle is displayed in the right upper corner of each button. If it is displayed with black background, this means, that there have been no changes on this particular function. If the background color is red, this function has been modified.

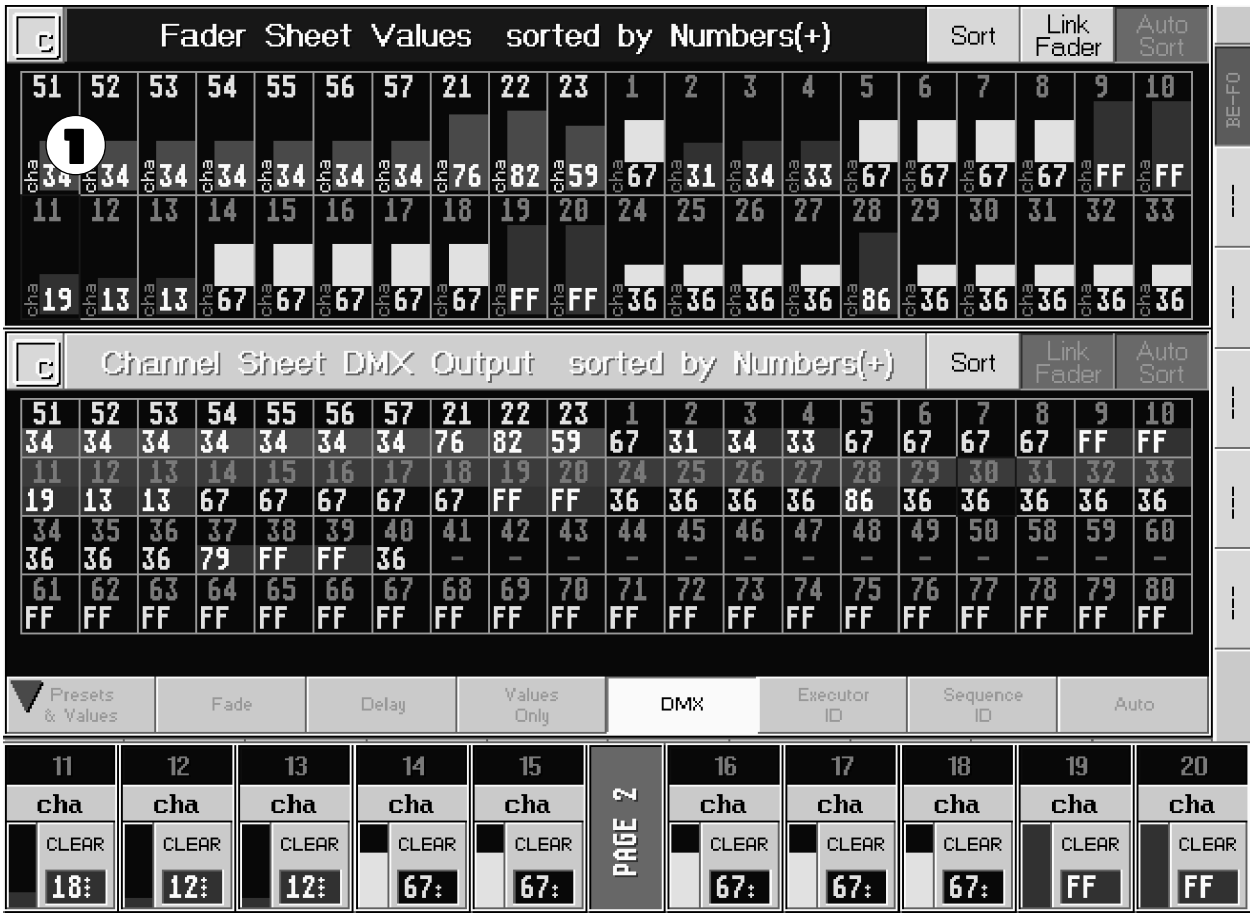
This window can be deleted by pressing the DELETE WINDOW button.

Pressing the CLOSE button will close the Option Window.

These settings will all be saved when saving the VIEWS (➡ **3.2** Saving VIEWS).

3.5 Accessing Dimmer Channels directly (in the CHANNEL SHEET)

The individual dimmer channels can always be accessed directly, provided that the desired channels have been selected for direct access (selected channels will be displayed in yellow characters in the CHANNEL window).



1 Select the channels, for which you wish to modify a value (selected channels will be displayed in yellow characters).

Selection:

- Call up a dimmer group. ➡ **3.3** Creating and calling up Fixtures and Dimmer GROUPS
  Or:
- Select dimmers via the CHANNEL button and the numeric keypad. ➡ **9** Command Line

  Or:
- Start with a left mouse click on the individual channels.
  Or:
- Make a left mouse click on the first channel and hold the mouse button down; by moving the mouse (creates a **Loop**), all channels **in this loop** are being **selected**.

2 Values can be modified with the encoders (Encoder assignment is displayed on the screen above) or with the Wheel.

Or:

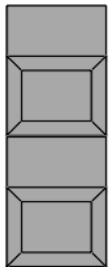
By direct entry into the Command Line (AT functions) you can also enter dimmer values ➡ **9** Command Line

Or:

Select channels with a middle mouse click and **hold** the mouse button down; the value will be modified by moving the mouse while holding the middle mouse button down.

3.5.1 CHANNEL Mode

CHANNEL FADER

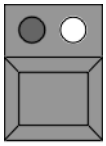


Activate CHANNEL Mode with the CHANNEL FADER buttons.

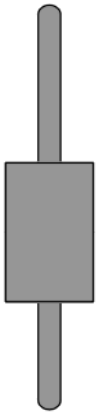
The assignment of Channels and Faders can be changed via the CHANNEL FADER buttons (for example: 1–20, 21–40, etc.).

The assignment of a channel number to a Fader is listed on the TFT displays above the faders.

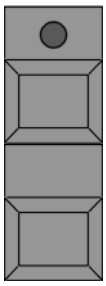
By pressing the CLEAR button, individual channels, which have been modified manually, can be released again while the selection of this channel will be deleted.



The respective channel can be selected using the button above the Fader.



In CHANNEL mode, the individual channel values can be set with the Faders.



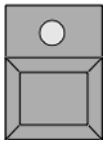
The respective channel can be set to 100% using the button below the Fader.

The respective channel can be hidden using the lower button.

In the TFT displays above the Faders, the assignment between channel numbers and Faders will be displayed.

In order to modify the selection **or** the active values of dimmer channels:

CLEAR



- Press CLEAR button:

  Pressing the CLEAR button for the **first** time deletes the selected dimmer channels in the OUTPUT window (yellow characters turn grey).

  The **modified** Values are kept and are displayed with red background.

- Press CLEAR button again:

  Pressing the CLEAR button the **second** time, takes off the activation of the modified values (red background).

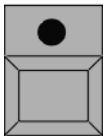
- Press CLEAR button one more time:

  Pressing the CLEAR button a **third** time, all changed values are reset (to Default or the previous position before activation).

When pressing the CLEAR button the first time, the LED in this button will flash. This shows, that only the selection has been deleted. The yellow LED will stop flashing as soon as you start to select other fixtures or dimmer channels.

You can also delete active values of single dimmer channels .

OFF



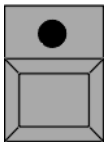
Press OFF button 1x (LED is on).

Press a button for the respective function on the Preset Control Bar or click on that function within the Fixture Sheet.

3.5.2 ALIGN Function

Using the ALIGN function enables you to use four different **function modes** for changing values.

ALIGN



Press the ALIGN button once (LED is on).

When changing active values, the first value will be taken as starting value (will not be changed), while the last value is the one modified most, and all values in between will be distributed evenly.

Press the ALIGN button twice (LED is on).

When changing the active values, the last value will be taken as starting value (will not be changed), while the first value will be the one modified most, and all values in between will be distributed evenly.

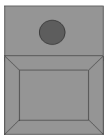
Press the ALIGN button 3 times (LED is on).

When changing the active values, the middle value will be taken as starting value (will not be changed), the first and last value will be the ones modified most, and all values in between will be distributed evenly.

3.5.3 PAUSE Function

With the Pause Function you can temporarily freeze dimmer channels. After activation of the Pause Function, no further changes will be put out at the DMX output. But you can still change and save dimmer channels internally.

▯▯

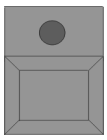


Press PAUSE button 1x (LED is on).

Click on Dimmer button in the Group Window or click on dimmer channels in the Channel or Fader Sheet. Parked dimmer channels will be displayed with a blue background.

Parked dimmer channels can also be released either entirely or separately.

GO +



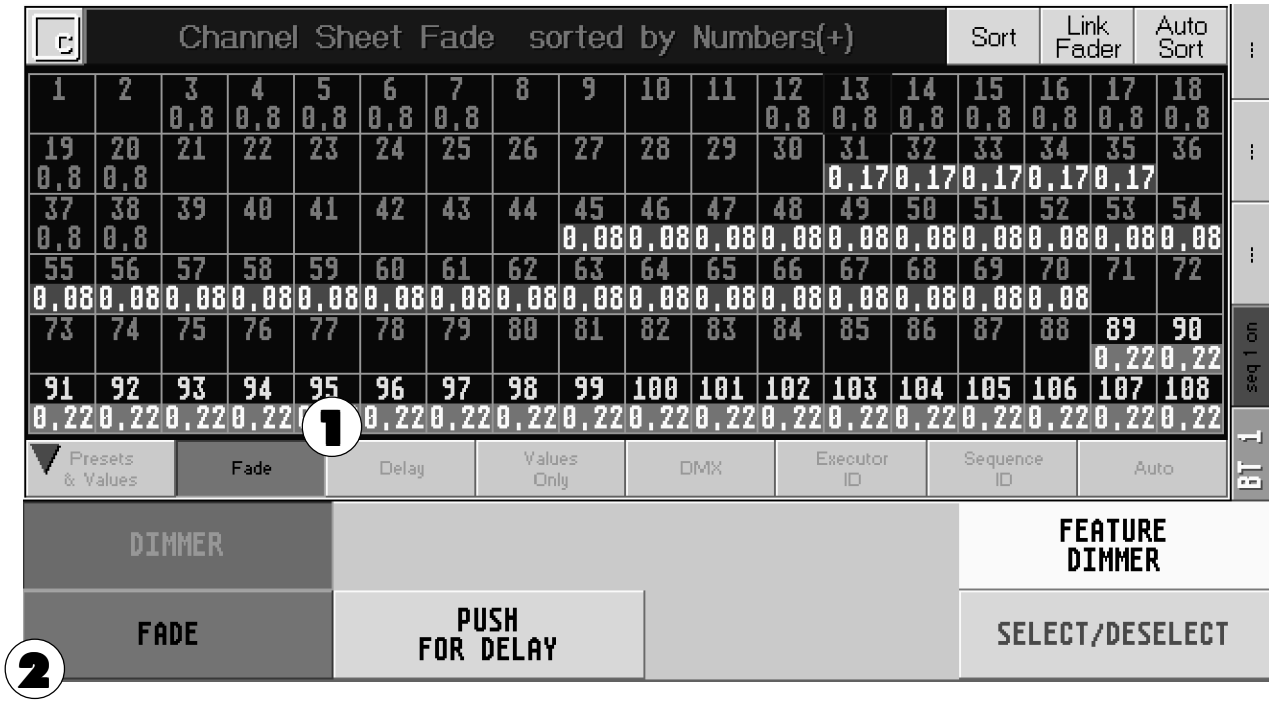
Press GO+ button 1x (LED is on).

Click on dimmer button in the Group window or click on dimmer channels in the Channel or Fader Sheet.

3.5.4 FADE and DELAY times in the CHANNEL window

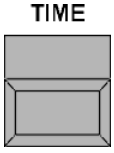
In addition to the standard (basic) FADE times, individual durations can also be set for the individual functions in the FIXTURE window (not in the FADER CHANNEL window).

These settings are needed when creating Cues, so that you can work with different FADE or DELAY times for individual channels.



1 Press the FADE or DELAY button (switching on the control bar ➡ **3,5.7** Options in the Channel window).

Or:



If the AUTO button is pressed (on the control bar or in the options, Switching on the Control bar. ➡ **3,5.7** Options in the Fixture window), when pressing the TIME button once, this will switch the channel sheet to the **FADE** time mode. The second time, this will switch the channel sheet to the DELAY time mode.

If the AUTO button is not pressed, the display will not switch over. The currently selected function of the FADE or DELAY Command Line will be displayed by an arrow on the control bar for the Command Line ➡ **9** Command Line

2 Now you can modify the IND. FADE or IND. DELAY time for the selected dimmer channels using the left encoder.

You can switch between IND. FADE and IND. DELAY time by pushing either the PUSH FOR DELAY/FADE button or the second encoder.

3.5.5 Link Fader-Function in the CHANNEL window

If the Link Fader function is activated (button has a black background), all changes will automatically be transferred to the faders when in CHANNEL mode (➡ CHANNEL mode).

3.5.6 AUTO-SORT-Function in the CHANNEL window

If the AUTO-SORT-function is activated (button has a black background), the selected channels in the CHANNEL window will automatically be moved to the left and upwards.

3.5.7 Options within the CHANNEL window

Touch the touch screen on the left corner of the title bar.

Or:

Start with a right mouse click on top line. The CHANNEL SHEET OPTIONS window will open.

Layer to Display (not in the FADER CHANNEL window):
By pressing the respective buttons, the following basic values will be displayed:

- Values: Values are displayed in the CHANNEL window.
- Fade: FADE times will be displayed.
- Delay: DELAY times will be displayed.
- DMX: The DMX output values are displayed.
- Id Executor: The Executor's number and page are displayed (only valid for Executor buttons).
- Id Sequence: The Sequence's number and respective Cue are displayed (only valid for Executor buttons).
- Auto: If this button is pressed, the display will automatically swap in this window when using the TIME button.

Font Size (not in the FADER CHANNEL window):
Pressing this button, you can choose between LARGE or SMALL characters in this window.

Sort by:
With the respective button, you can define the channels' sorting order in the window.

- Numbers: Within the CHANNEL window channels are sorted by numbers.
- Names: Channels will be sorted by name.
- Selected Devices: The **selected** channels will be moved to left/above.
- Active Values: Channels for which a value is **activated**, will be moved upwards.
- Values: Channels will be sorted by highest value.
- Sort Ascendig: Sorting by ascending numbers.
  Sort Desending: Sorting by descending numbers.

Readout:
By pressing this button, you can choose the display criteria for the values.

- %: Values will be displayed as percentages.
- % +: Values will be given as percentage values; interim values will be displayed next to the figure in form of dots.
- DEC: Values will be given as decimal numbers (0–255).
- HEX: Values will be given as hexadecimal numbers (0–FF).

Direction:
By pressing this button, you can choose between sorting the channels from left to right or from top to bottom.

Colums:

- The figure indicates, how many channels will be displayed in one column. Clicking on that figure, you can enter a new number via keyboard; confirm with ENTER. The new number will automatically be taken over.
- With this button, you can choose between either AUTO WRAP (automatic adaptation of size when changing the number of channels in this window) or NO WRAP (size of channels will **not** be adjusted when modifying the number).

Name Field:

- With this button, you can switch between SHOW (displays the channel names) and HIDE (no names are displayed).

The Channel window can be deleted by pressing the DELETE button.

By pressing the CLOSE button, the Option window will be closed.

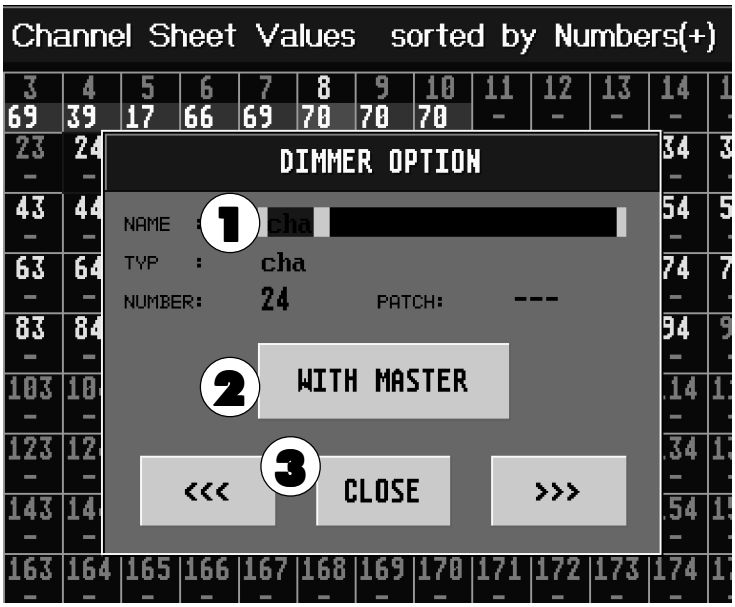
All these settings (excl. "LINK") will be saved when saving the VIEWS (➡ **3.2** Saving VIEWS).

3.5.8 DIMMER OPTION

In the Channel Sheet, you can adapt different basic settings for each individual Dimmer channel.

Make a right mouse click on the Channel.

The DIMMER OPTION window will open.



1 The Dimmer channel can be renamed using the keyboard.

Next to TYPE the type of Dimmer is displayed, next to NUMBER the corresponding number, and next to PATCH the patched channel for this Channel.

2 Pressing the WITH MASTER button (display changes to NO MASTER), the Dimmer channel will be output without regard to the set GRANDMASTER.

If a Dimmer channel was modified in this window, the Dimmer channel's number or name will be displayed on a blue background in the Channel Sheet.

These modifications can also be defined while patching Dimmer channels. ➡ **2.5** Selecting DMX addresses for Dimmers

3 With the <<< button, you can switch to the previous Dimmer channel. With the >>> button, you can switch to the next Dimmer channel.

With the CLOSE button, you can close the window.

3.6 Colours used in the FIXTURE, CHANNEL and FADER window

Input or Function	Status	Channel number/ Attribute	Dimmer Channel Value	Fixture Attribute Value
Channel or attribute not used, or released 3x CLEAR	not selected, no value	gray	gray	gray
Not selected, but value from any Executor	not selected, but output value >0%	gray	yellow	yellow
Dimmer not selected, last fade on Master Sequence did not change the value	not selected, but output value >0%	gray	blue-green	yellow
Dimmer not selected, last fade on Master Sequence decreased the value (DOWN)	not selected, but output value >0%	gray	green	yellow
Dimmer not selected, last fade on Master Sequence increased the value (UP)	not selected, but output value >0%	gray	magenta	yellow
Not selected, last change was manual	not selected, but manual changed	gray	White on dark-red background	White on dark-red background
Manuell calling up	selected, but not active	yellow	gray	gray
Again manual Activation or changed by Fader or Encoder	active	yellow	white on red background	white on red background
Selection deleted by CLEAR button	not selected, not active, but selected	gray	White on dark-red background	White on dark-red background
Activation deleted by CLEAR button	not selected, but manually changed	grey	white	white
Not selected, but value from any Executor (except Master)	only output	grey	yellow	yellow
Not selected, but Preset activated	not selected, value fromPreset	gray	Turquoise on dark-red background	White on dark-red background
Selected, after Preset was activated	selected, value fromPreset	yellow	Turquoise on red background	White on red background
Activation deleted by CLEAR	Not selected, value from Preset	gray	White on tur-quoise background	White

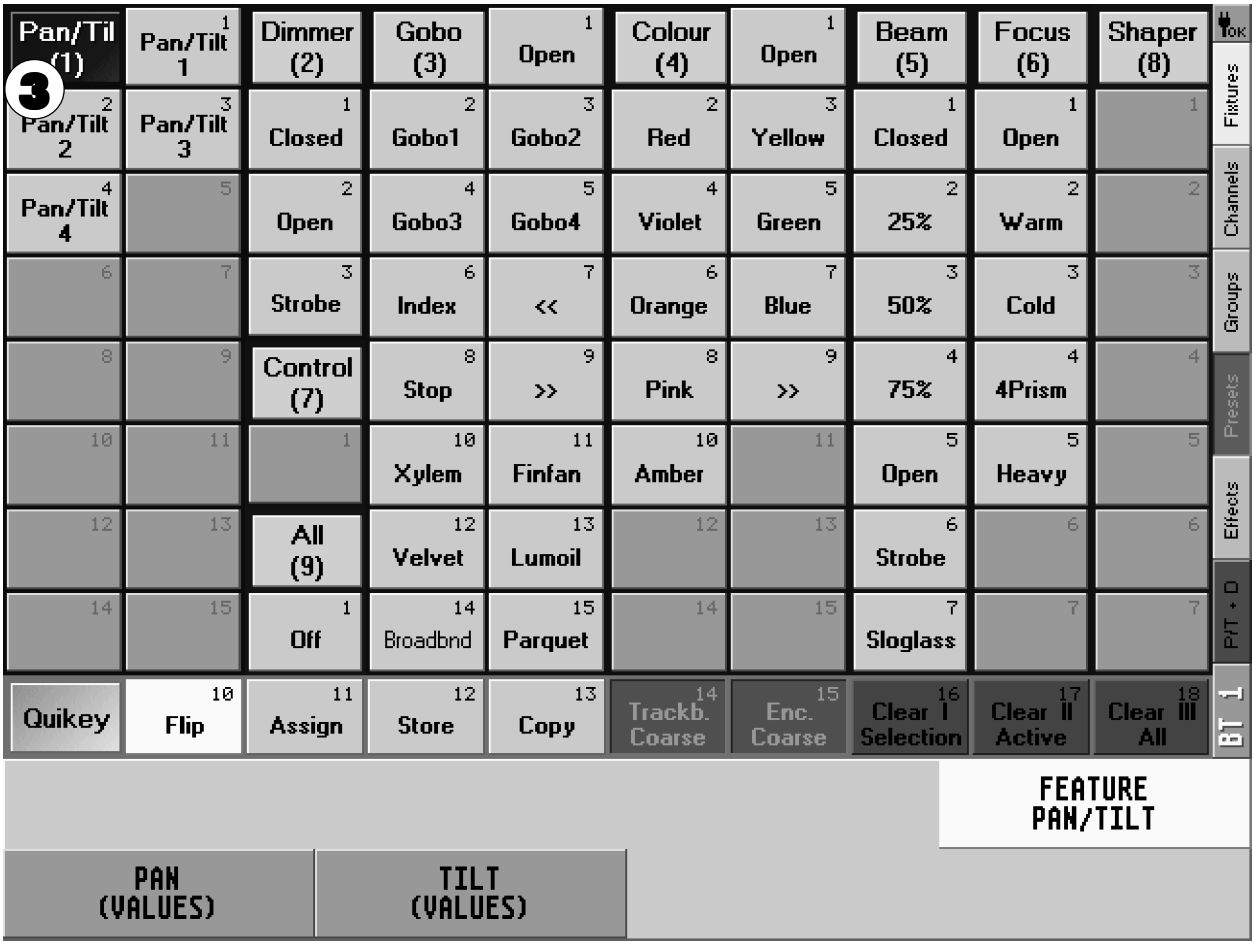
3.7 Creating and calling up Presets

There are certain values for the functions of fixtures, which will be needed again and again, for example the values for individual colours of the color wheel. These values can be programmed as presets in the respective PRESET window and can here be called up again.

If you have presets for the fixtures be created automatically (CREATE PRESETS), these pre-recorded presets will be available in the respective windows. ➡ **2.10** Creating Presets, Effects and Group buttons automatically

1 Create a window for all functions for which presets are to be used and position it on a display.

2 In the GROUP window, select those fixtures, for which you want to create a Preset, by a simple touch or mouse click (fixtures have to be displayed in yellow in the FIXTURE window).

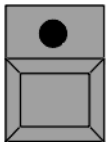


3 On the display, select the Preset group, for which you want to create a Preset, using the Touchscreen or by a left mouse click on the title bar, for example: In the Preset window PAN/TILT.

Values and positions can be changed by:

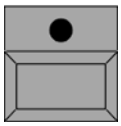
- Encoders (all functions and the assignment will be displayed on the right display above the encoders),
- Trackball (only PAN /TILT), if activated,
- Wheel (only for dimmer values),
- Middle mouse button (click on a value in the FIXTURE or CHANNEL window and hold it; the value will be changed by moving the mouse while holding the middle mouse button).

TRACKERBALL ON/OFF



- Switch on the Trackball by pressing the TRACKBALL ON button (the integrated LED must be on). Now you can control the selected fixtures via the trackball (PAN/TILT) . Changed (active) values will be displayed in the OUTPUT window by a red background colour.

STORE

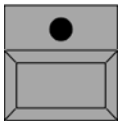


- Shortly push STORE button (STORE LED comes on). Select the required location on the display showing the PAN/TILT window by a simple touch or with left mouse click. These values are now saved in **this** location (STORE LED is off).
- Now enter a name for the preset using the keyboard: confirm with ENTER.

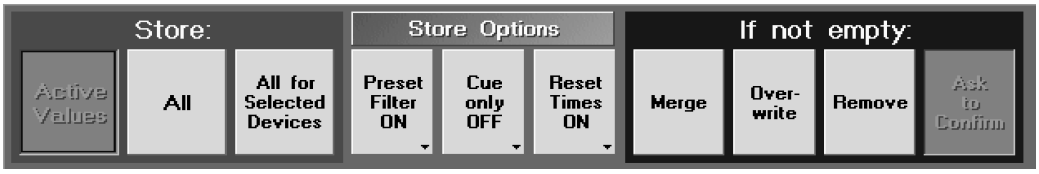
If you want to save more presets for the same fixtures and functions, start again with step **3**, until all presets for these fixtures/channels are done.

You can also save presets including several functions on one button. These presets can be created in any preset group.

STORE



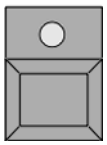
Push STORE button and **hold**. The following selection appears on the right TFT-Display:



- Shortly pressing the Preset Filter ON button will switch it to Preset Filter OFF.
- Now select the desired location with touchscreen or left mouse button. These values are now saved in **this** (Preset-) location (STORE LED is off).
- Enter a name for the preset using the keyboard; confirm with ENTER.

➡ **4.5** Update Cue or Preset

CLEAR

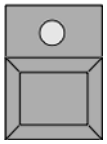


- Press CLEAR button once:

When pressing the CLEAR button for the **first** time, the selection for all fixtures in the FIXTURE sheet will be deleted (yellow characters will turn grey).

The modified (active) values will be preserved and are displayed on red background.

CLEAR

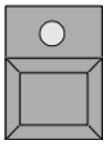


- Press CLEAR button again:

Pressing the CLEAR button the **second** time will cancel the activation of the modified values (red background).

- Press CLEAR button a 3rd time:

CLEAR

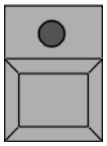


Pressing the CLEAR button a **third** time will reset all modified values (Default or to the position before the modification).

To create presets for other fixtures and functions, start again with step **5** and select the respective fixtures/channels and functions.

3.7.1 Moving Preset Buttons within the Window

MOVE

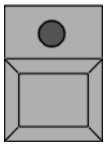


Press MOVE button 1x (LED comes on).

Activate the button in the respective window by either using the touchscreen or making a left mouse click on the button and hold (a hand symbol appears). Move the button to the required location within this window and release it.

You can also insert preset buttons.

MOVE

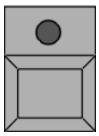


Press MOVE button 2x (LED flashes).

Activate the button in the respective preset window using the touchscreen or a left mouse click on the button and hold it (hand symbol appears). Move the button to the desired location between the other buttons and release it. The following buttons will all be moved by one position to the right.

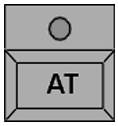
3.7.2 Copying Presets

COPY



Press the COPY button once (LED is on).

Select the Preset Buttons in the respective PRESET Window. By selecting various presets, several presets can be copied at the same time.



Press AT button 1x (LED is on).

Click on the position for the copied presets in the PRESET Window.

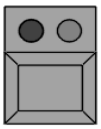
Press the ENTER button once.

3.7.3 Calling up Presets

Select the Fixtures or Dimmers, for which you want to call up a preset (Fixtures/Dimmers have to be displayed in yellow). Now, the individual presets can be called up for the selected Fixtures. The called-up presets and their names will be displayed in the FIXTURE windows.

If you select a preset directly, without having selected Fixtures or Dimmer channels, all Fixtures and Dimmers, for which presets had been created, will be selected. The preset can now be called up by pressing the respective button.

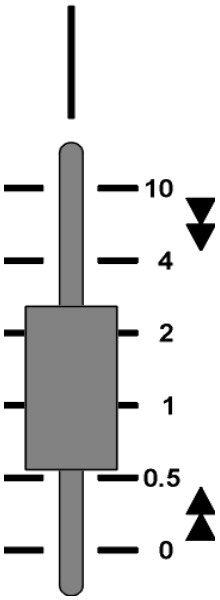
SET MANUAL FADE



Using the Fader next to the right display, you can either define Preset Fade times or fade over presets manually.

Press the button above the Fader once (red LED is on). Select the desired Fade time using the Fader. The selected Fade time will be used when presets are being called up.

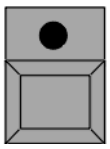
Press the button above the Fader once more (green LED is on). Select your Presets. With the Fader, you can now fade over towards the selected Preset. Default setting for the Fader to fade just upwards or in both directions ➠ **2.14** Settings in the DEFAULTS menu below the Executor Defaults Crossfade.



3.7.4 FREEZE Function

By activating the FREEZE function, called-up Presets can be locked. As long as the FREEZE Function is switched on, the called-up preset can not be overwritten by any Cues, Sequences or Chasers.

FREEZE



Press the FREEZE button once (LED is on).

Select a Preset – the selected Preset will be activated and can no longer be modified by Cues, Sequences or Chasers.

In order to deactivate the FREEZE function, press the FREEZE button once more (LED is off).

➠ 3.4.2 Pause Function

3.8 Deleting Groups, Sequences, Views etc.

For all following Deletions, the DELETE button has to be pressed in advance (LED is on).

Deleting Groups: Select the respective Group by touch or left mouse click.

or:

Press the GROUP button. Enter a Group number using the numeric keypad and confirm with ENTER.

Deleting Presets: Select Preset in the respective window by touch or left mouse click.

or:

Press the PRESET button. Enter a Preset Function number (e.g.: 3 for Gobo) followed by „." and the Preset number; confirm with ENTER.

Deleting VIEW Assignments: Select a VIEW with the VIEW button on the side of the numeric keypad, via the Touchscreen or a left mouse click.

Deleting a VIEW: Press the VIEW button (LED is on). The SELECT VIEW window appears; now select the window to be deleted. The VIEW Name will be maintained, but without any contents. All assignments to VIEW buttons are now deleted.

Deleting a MACRO: Press the MACRO button (LED is on). The SELECT MACRO window appears; now select the macro to be deleted. The MACRO Name will be maintained, but witout any contents. All assignments to MACRO buttons are now deleted.

Deleting an EXECUTOR: Press the desired EXECUTOR button.

or:

Deleting the EXECUTOR on the **current** page:
- Press the EXECUTOR button next to the numeric keypad (LED is on). Enter the EXECUTOR number via the numeric keypad and confirm with ENTER.

Deleting the EXECUTOR on **another** page:
- Press the EXECUTOR button next to the numeric keypad (LED is on). Now, enter the PAGE number.

Then, press the full stop key and the number of the EXECUTOR and confirm with ENTER.

Example: EXECUTOR 5 on PAGE 3 is to be deleted:
Entry: [DELETE button] [EXECUTOR button] [3] [.] [5] [ENTER]

Or:

- Press the EXECUTOR button next to the numeric keypad (LED is on). Enter the EXECUTOR number via the numeric keypad.
- Press the PAGE button next to the numeric keypad (LED is on). Enter the PAGE number via the numeric keypad and confirm with ENTER.

Deleting Sequences: Press the SEQUENCE button. Enter the number of Sequence via the numeric keypad and confirm with ENTER.

Deleting CUES: Press the SEQUENCE button. Enter the number of Sequence via the numeric keypad. Press the CUE button and enter the cue number via numeric keypad; confirm with ENTER.

If no sequence number is entered, the Cue of the Master (default) sequence is deleted.

Deleting a PAGE: Press the PAGE button next to the numeric keypad. Enter the PAGE number via the numeric keypad and confirm with ENTER. The complete PAGE with all EXECUTOR faders and buttons is deleted.

4 Cues and Sequences

Cues are individual stage settings, which can be assigned and saved directly to and on so-called EXECUTOR buttons or EXECUTOR Faders.

Several cues in line are called a sequence, which can also be assigned and saved to and on so-called EXECUTOR buttons or EXECUTOR Faders.

If cues and sequences are created on the basis of Presets, a later change of this Preset will automatically cause the respective change of all cues and sequences in this Preset.

Thus, the time-consuming check and correction of each Cue becomes unnecessary.

TIP Therefore, we recommend to use the Preset functions as often as possible.

EXECUTOR buttons or Faders can be used and can have assignments for multiple created sequences.

EXECUTOR Faders and buttons are organised pagewise (in PAGES). You can work on several PAGES simultaneously. When using motor faders, always those motor faders will be moving which had been activated on that respective PAGE.

With the EXECUTOR buttons it is possible to call up the Cues, Sequences and Chasers. à **5.1.3** Buttons and Faders.

For the dimmer channels, the respective FADER and the Grandmaster always has to be pushed upwards.

EXECUTOR buttons do not have a Master and are therefore activated immediately. If dimmer values are called up via Cues or Sequences **assigned to EXECUTOR buttons**, these values will be overwritten (➡ LTP principle) when calling up the same dimmers via Executor buttons later. In practical terms this means: Dimmers, serving as "standard" console (HTP), have to be assigned to the Executor Faders.

4.1 Creating Cues (separate memories)

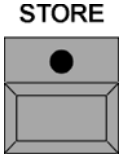
The actual stage setting can be saved as a Cue and be called up via the EXECUTOR buttons or faders.

- All **changed** (active) values (recommended setting),
- **all** momentary settings (complete Output),
- or **all** values of the **selected** Fixtures and channels can be saved as Cues.

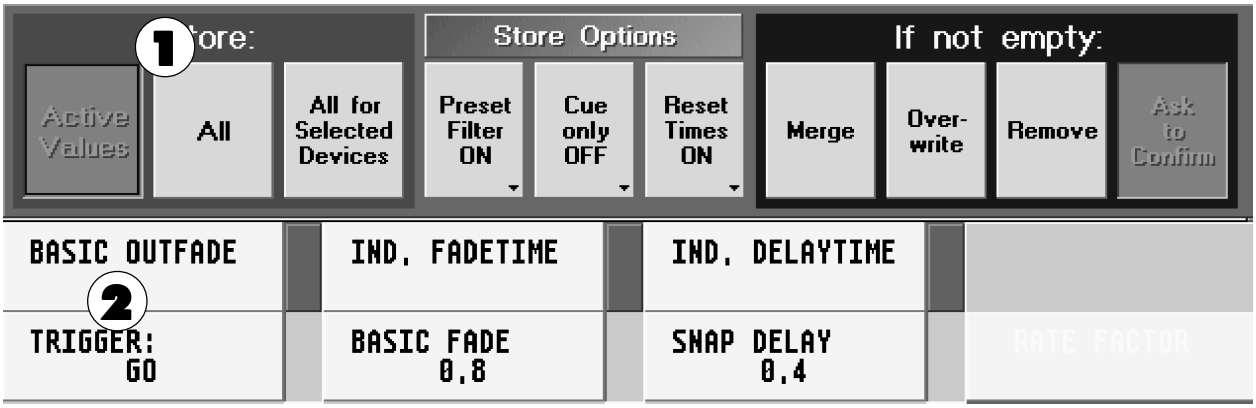
4.1.1 Creating new Cues

Define the stage setting via direct access or presets. ➡ **3.4** and **3.5** Accessing Dimmer Channels directly or **3.7** Calling up Presets

This shall now be saved as CUE in the following way**:**



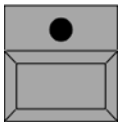
Press the STORE button and **hold** it. The following options and encoder names will appear on the right TFT display:



1 Press this button (selected button will receive dark-grey background colour):

- Active Values: Save **only** the **active** values (all values in the FIXTURE/CHANNEL window which are shown with a **red background colour**).
- All: Save **all** momentary settings (all fixture and channel values).
- All for Selected Devices: **All** values of the **selected** fixtures and channels are being saved (the fixture/channel numbers will be marked in yellow).

STORE



Release the STORE button (LED stays on).

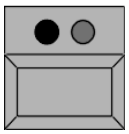
For **this** CUE, set the following parameters via the encoders:

- TRIGGER: Call of the CUE by GO, SOUND, TIME or FOLLOW (i.e. after all previous durations have ended) or automatically at a set point of time.
- BASIC-FADE: CUE will be faded in with a set time; this is only possible with "FADE" functions. ➡ **2.8** Single Channel-specific Adjustments for the Current Show (point 10) and ➡ **2.11** EDITING FIXTURES (modify) (point 9)
- SNAP DELAY: The values of the CUE will be called up with delay (only with "SNAP" functions).

- OUTFADE TIME: Dimmer channels, which **become smaller** in the next Cue, will be faded with the set duration.
- IND. FADETIME: All additional individual FADE times set in the FIXTURE Sheet.
- IND. DELAYTIME: All additional individual DELAY times set in the FIXTURE Sheet.

Cues can be saved on EXECUTOR faders or EXECUTOR buttons.

31

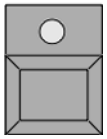


Define the assignment position of the Cue by pressing the EXECUTOR button once. When saving to an EXECUTOR FADER, press a button above or below the fader once.

The CUE is now assigned to this EXECUTOR button or EXECUTOR fader and saved to the Sequence Pool. This way it is possible, to assign the same Cue more often than once. ➡ **5.1** ASSIGN menu (Assignment to EXECUTOR)

Repeat all steps to create the next Cue.

CLEAR



Pressing the CLEAR button: once - will delete the selection, twice – will delete the active values and reset all values then.

4.1.2 Overwriting a Cue

If you wish to overwrite a Cue completely, simply use the same EXECUTOR fader or EXECUTOR button once again. The following window will appear:

In order to overwrite this cue completely, press the OVERWRITE button.

4.1.3 Merging a Cue

When merging cues, all existing and saved settings will be maintained. The newly set values will be saved and added to the cue, while already existing values will be overwritten.

If you wish to merge a cue, simply use the same EXECUTOR Fader or EXECUTOR button once again. The SAVE window will appear (as above). In order to merge this cue, press the MERGE button.

4.1.4 Removing a Cue

In the removing operation, only those parts of the Cue will be taken out (deleted) of the already existing Cue that are active (red).

You can also remove some part of a complete sequence by entering: [STORE] [SEQUENCE] [Sequence number] [CUE] [1] [THRU] [number of last Cue] [ENTER]. A window will open in which you confirm your operation by pressing the REMOVE button. (This syntax does also apply for "OVERWRITE" and "MERGE".)

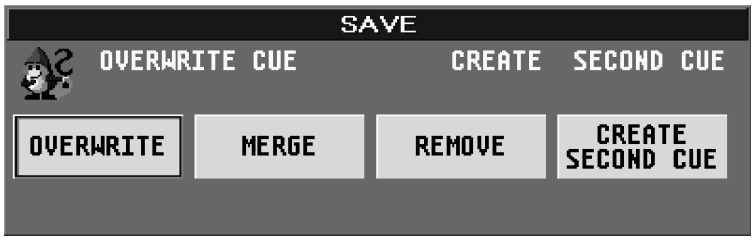
Caution! In NON-TRACKING mode, only Dimmer channels of the first copied Cue are taken account of. For the following Cues, the Dimmer values are "0" and have to be reprogrammed manually.

4.2 Programming Sequences

Sequence is the generic term for a combination of cues, with the option of various Fade and Delay times per channel and cue. Sequences can be saved either on an EXECUTOR fader or an EXECUTOR button.

Save the first Cue (first step of a sequence) either on an EXECUTOR fader or an EXECUTOR button. ➡ **4.1** Creating Cues

Set the second Cue (next step of the sequence) as before. When saving the second Cue, use the same EXECUTOR fader or EXECUTOR button. Now, the SAVE window will appear:



In order to create a Sequence (more than one Cue) now, press the CREATE SECOND CUE button. The saved Cue will now be saved in this Sequence as the second step.

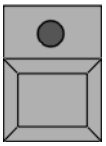
In the ASSIGN menu, you can define whether this Sequence should be executed in TRACKING or NON-TRACKING mode. TRACKING and NON TRACKING do only refer to Dimmer values. ➡ **5.1.4** EXECUTOR SETTINGS

Create the next Cue for any other step and use the same EXECUTOR fader or button when saving.

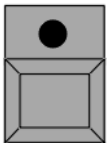
4.2.1 Copying Sequences

Once a Sequence has been set, it can be copied completely with all Cues, Fade and Delay times.

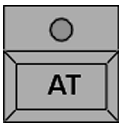
COPY — Press the COPY button once (LED is on).



SEQUENCE — Press the SEQUENCE button once (LED is on).



Using the numeric keypad, enter the number of the Sequence to be copied. All sequences and their numbers will be displayed in the Assign menu. ➠ **5.1** ASSIGN Menu

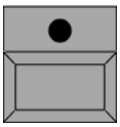


Press the AT button once (LED is on).

Using the numeric keypad, enter the number of the new Sequence and confirm with ENTER.

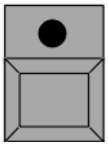
4.2.2 Including Cues

STORE — Set a Cue ➠ **4.1** Creating Cues



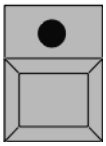
Press the STORE button once (LED is on).

SEQUENCE — Press the SEQUENCE button once (LED is on).



Enter the number of the Sequence using the numeric keypad.

CUE — Press the CUE button once (LED is on).



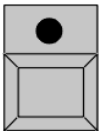
Enter the number of the **new** Cue via numeric keypad and confirm with ENTER.

Example: A new Cue is to be included between Cue 3 and Cue 4. This new Cue will be named for example Cue no. 3.1(numbers between 3.001 and 3.999 are possible).This way, 999 Cues can be included between two Cues.

4.2.3 Default Sequence (Master Sequence)

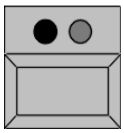
When creating sequences, Cues can directly be saved on a Default Sequence.

SELECT — Press the SELECT button once (LED is on).

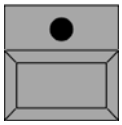


Select the respective EXECUTOR, which shall run the Default Sequence by pressing the respective EXECUTOR button once. The headline of the small EXECUTOR window will be green.

31 — Set the first Cue of the Default Sequence. ➡ **4.1** Creating Cues



STORE — Push STORE button 1x (LED flashes).

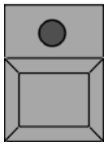


Push ENTER button 1x; the created cue is now saved in the Master Sequence.

TIP If no EXECUTOR button has been selected before saving, and you confirm with ENTER, the saved Cue will always be added to the current Default Sequence.

In the Default Sequence, Cues can be called up directly

GOTO — Press the GOTO Button once (LED is on).



Enter the Cue number on the numeric keypad and confirm with ENTER. The Cue will be called up with the preset duration (➡ **2.14** Settings in the DEFAULTS menu).

When calling up Cues directly, you can enter a FADE or DELAY time using the TIME button.

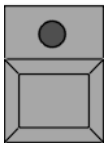
After having entered the Cue number, press the TIME button for the FADE time once and enter the duration using the numeric keypad, or press the TIME button once more for the DELAY time, enter the duration using the numeric keypad and confirm with enter. The Cue will be called up with the entered duration.

The Cue will always be called up as if the Sequence would run from the very beginning. That means, all previous steps will be accounted for and the result will be realized immediately afterwards. (As far as Dimmers are concerned, this function depends on whether Tracking had been activated in the ASSIGN menu. ➡ 5.1.4 EXECUTOR SETTINGS**)**

4.2.4 LOAD CUE

You can use LOAD CUE in order to directly call up a certain cue with either one or several executors.

GOTO — Press the GOTO button twice (LED is blinks).



Select an executor by shortly pressing a button.

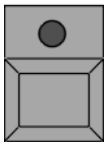
A window with a chart appears. All cues of this sequence are listed in this chart.

If you select one of these cues, it will be loaded. This cue will be displayed as next (red blinking background) in the small executor window above the executor.

Start this cue with the GO button.

Cues within the Mastersequence can be directly loaded

GOTO — Press GOTO button twice (LED is on).

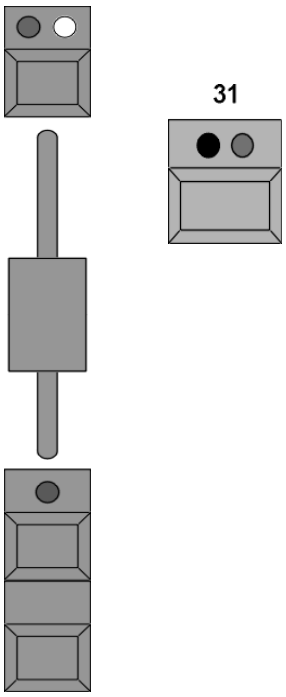


Enter Cue number using the keypad and confirm with ENTER.

The Cue will be loaded and displayed as next (red blinking background) in the small executor window above the executor.

Start this cue with the GO button.

4.2.4 Calling sequences or chasers (Playback)



Using the EXECUTOR button, you can call up the saved Sequences directly.

If the green LED in the button is on, a Cue or a Sequence is saved on this button.

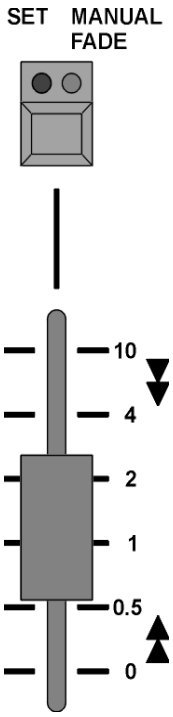
If the yellow LED is on or is flashing, this Cue, the Sequence or the saved Chaser is activated.

The yellow LED indicates the beat of a Chaser or a Sequence.

Push up the respective Fader for the EXECUTOR faders to see the dimmer values. Call up the Cue using the Go+ button (standard setting: button below the Fader). If the green LED in the button above the Fader is on, a Cue or a Sequence is saved on this button.

If the yellow LED is on or is flashing, this Cue, the Sequence or the saved Chaser is activated. The yellow LED indicates the beat of a Chaser or a Sequence.

Using the PAGE buttons, you can additionally select other pages. Using the PAGE buttons, you can additionally select other pages. ➠ **5.4** PAGE Administration (PAGE)



With the Fader right to the EXECUTOR button, you can either set fixed fade times or perform a fade-in manually when calling up Cues using the EXECUTOR buttons.

Press the button above the Fader once (red LED is on). Set the desired fade time using the Fader. When selecting Cues using the EXECUTOR buttons, only the fade time set here will be used (does also apply for SNAPDELAY times).

Press the button above the Fader again (green LED is on). Select the Cue using the EXECUTOR button. Using the Fader, you can now fade to the selected Cue. Default setting for the Fader to fade just upwards or in both directions ➠ **2.14** Settings in the DEFAULTS menu below the Executor Defaults Crossfade.

With the PREVIEW function, Cues in the FIXTURE SHEET or CHANNEL SHEET will be displayed (without output to the DMX output).

Press the PREVIEW button once and call up the desired Cue using the EXECUTOR button.

4.3 Editing Sequences

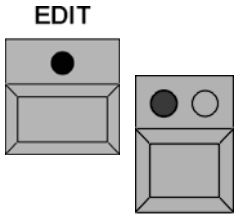
During editing procedures, you can change **all** values of the various cues, add values or delete them. The X-FADE and DELAY times can be adapted, and the call of various cues via GO button, X-FADER, SOUND or TIME can be defined.

Except as indicated in this chapter, there are three other ways:

➡ **4.1.2, 4.1.3, 4.1.4** Overwriting, expanding, removing Cues

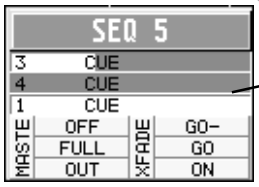
➡ **4.3.4** Update Cues or Presets

➡ **5.3** EXECUTOR window



Press the EDIT button (LED is on).

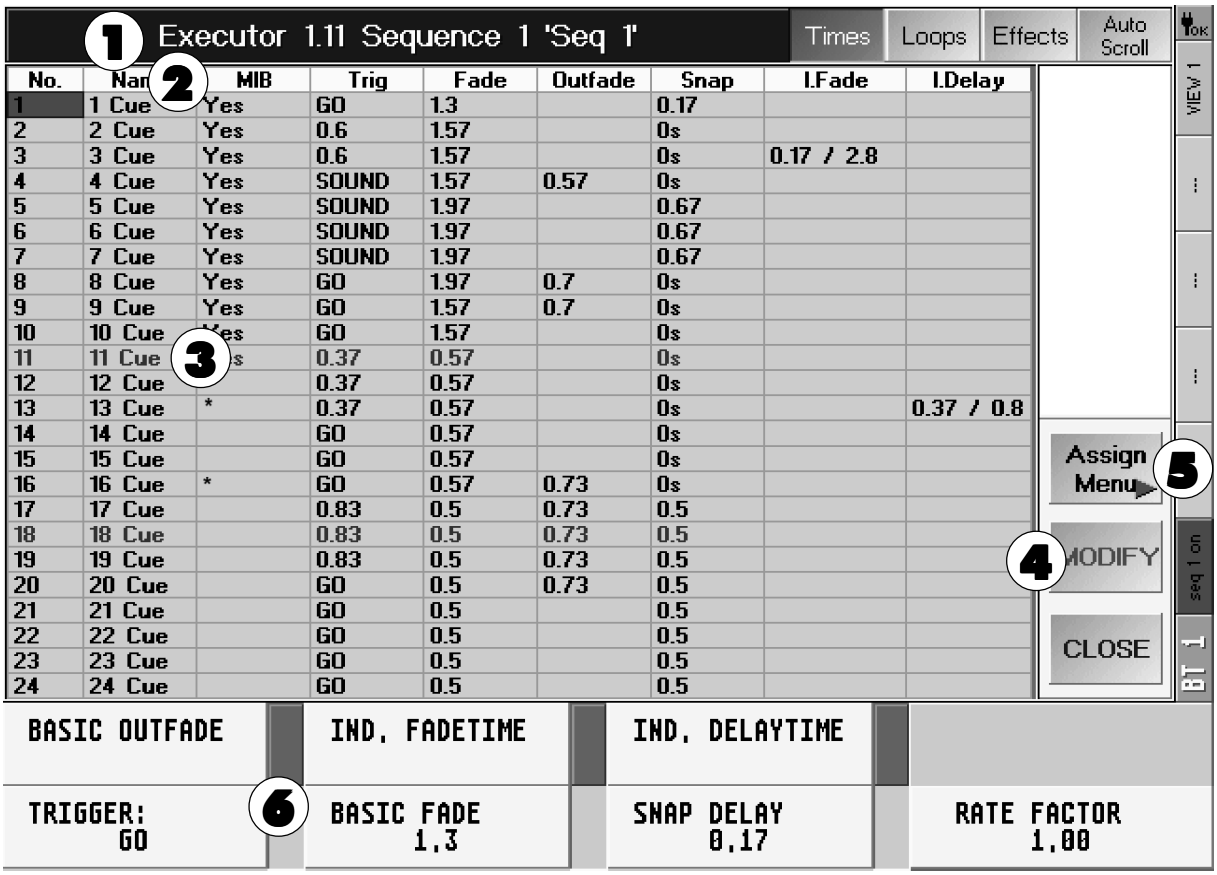
Select the cue or sequence with the respective EXECUTOR button.



Or:

Make a left mouse click into the Sheet of the small window above the EXECUTOR Fader or use the touchscreen to do so.

The EDIT menu appears on the right TFT display, showing a listing of the individual cues.



No.	Name	MIB	Trig	Fade	Outfade	Snap	I.Fade	I.Delay
1	1 Cue	Yes	GO	1.3		0.17		
2	2 Cue	Yes	0.6	1.57		0s		
3	3 Cue	Yes	0.6	1.57		0s	0.17 / 2.8	
4	4 Cue	Yes	SOUND	1.57	0.57	0s		
5	5 Cue	Yes	SOUND	1.97		0.67		
6	6 Cue	Yes	SOUND	1.97		0.67		
7	7 Cue	Yes	SOUND	1.97		0.67		
8	8 Cue	Yes	GO	1.97	0.7	0s		
9	9 Cue	Yes	GO	1.57	0.7	0s		
10	10 Cue	Yes	GO	1.57		0s		
11	11 Cue	s	0.37	0.57		0s		
12	12 Cue		0.37	0.57		0s		
13	13 Cue	*	0.37	0.57		0s		0.37 / 0.8
14	14 Cue		GO	0.57		0s		
15	15 Cue		GO	0.57		0s		
16	16 Cue	*	GO	0.57	0.73	0s		
17	17 Cue		0.83	0.5	0.73	0.5		
18	18 Cue		0.83	0.5	0.73	0.5		
19	19 Cue		0.83	0.5	0.73	0.5		
20	20 Cue		GO	0.5	0.73	0.5		
21	21 Cue		GO	0.5		0.5		
22	22 Cue		GO	0.5		0.5		
23	23 Cue		GO	0.5		0.5		
24	24 Cue		GO	0.5		0.5		

1 You will find the addressed EXECUTOR fader or button in the headline, giving the number of the PAGE and the sequence by its name.

2 The second line will give you the functions of the columns.

- No.: Number of Cue
- NAME: Name of Cue
- MIB: Activate MIB (Move In Black function) individually for each cue. Activate it by selecting a cell and shortly pressing on the encoder on the right side of the display. Activation is confirmed by YES.

MIB can only be used in cells where a " * " is displayed.

- TRIGGER: Call up Cue (GO button, SOUND, TIME or FOLLOW)

If the TIMES button on the title bar is pressed:

- FADE: FADE time
- OUTFADE: Duration of fade in on Dimmer channels becoming smaller
- SNAP: Duration of the DELAY
- IND.FADE: Duration of the individual FADE time (min and max)
- IND. DELAY: Duration of the individual DELAY time (min and max)

If the LOOPS button on the title bar is pressed:

- LOOP: will jump, when called up, to the CUE of the given number **without** calling up this Cue
- LOOPDELAY: The sequence of the LOOP-Function will be displayed
- LINK: The set Macro will be displayed
- LI. DEL: The set time will be displayed, **after** which the Macro will be called up

If the EFFECTS button on the title bar is pressed:

- EFFECTS: Display of the effects calls

A second sheet will appear in the lower part of the display:

- NO.: Number of the Effect Group
- NAME: Name of the Effect Group
- ACTION: Type of Effect call
- INTENS: Display of the defined size of the Effect Group
  F (Fade): If Y (YES) is displayed, the size will be faded in with the set fade time
- SPEED: Display of the defined speed of the Effect Group
  F (Fade): If Y (YES) is displayed, the speed will be faded in with the set fade time
- SOFT: Display of the set softness (softer fade in) of the effect
  F (Fade): If Y (YES) is displayed, the softness will be faded in with the set fade time

If AUTO SCROLL button is pressed, the chart will be automatically moved to top/bottom when handling larger sequences.

3 The chart will show you all cues of a sequence including the various TRIGGER functions.

4 You can define the TRIGGER (call-up option) for **all** cues using the buttons (selected button will turn dark gray).

5 The MODIFY CUE button will enable you to change values of individual cues (➠ below).

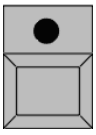
6 This button will lead you to the ASSIGN menu. ➠ **5.1** ASSIGN menu

7 Description of each encoder.

4.3.1 Changing values for individual steps in the sequence

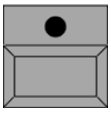
- Select the Cue that you want to change (red cell).
- Press the MODIFY CUE button (the Cue will be displayed on a green background and the STORE button starts flashing).
- In the FIXTURE or CHANNEL window, **all values of the Cue will now be called up or displayed (active, red).** At the same time, this Cue will be put out on stage.
- The cue can now be changed by either direct access or presets. ➠ **3.4** Accessing Fixtures directly (in the FIXTURE SHEET) / **3.5** Accessing Dimmer Channels directly (in the CHANNEL SHEET) and **3.7** Creating and calling up Presets

BLIND



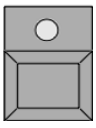
If the Cue is not to be seen on stage, activate the Blind function by pressing the BLIND button (integrated LED is on).

STORE



Press the STORE button once. The changed Cue is now saved.

CLEAR

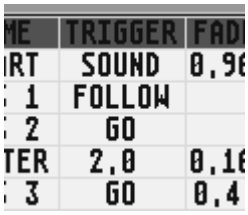


Press the CLEAR button twice if necessary (Cue values will be deleted in the FIXTURE or CHANNEL window).

For modifying further Cues, select the respective Cue one by one (will be displayed on a green background).

Repeat all steps as described with first cue and save with STORE.

4.3.2 Changing the TRIGGER (Call-up) of individual Steps within the Sequence

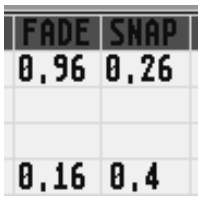


Select the respective cue within the TRIGGER column (red cell).

Enter the following with the left Encoder or via the keyboard and confirm with ENTER.

- F: for FOLLOW mode
- G: for GO button
- S: for SOUND signal
- No.: Automatically according to set time (e.g. if the set time is 1.5, this Cue will be called up after 1.5 seconds automatically).

4.3.3 Changing the FADE or DELAY times of individual steps within the Sequence



Select the respective cue (red cell).

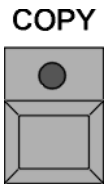
Here, the duration for **this** cue can be changed globally with the BASIC-FADE TIME encoder. Pressing the encoder BASIC-FADE TIME, you switch to IND.FADE (all additional individual FADE times changed in the FIXTURE-Timing sheet). By turning the wheel, you can change these times.

Pressing the encoder SNAP DELAY, you switch to DELAY TIME (all additional individual DELAY times changed in the FIXTURE-Timing sheet). Byturning the wheel, you can change these times.

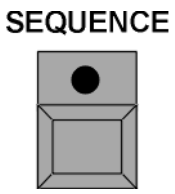
Pressing the TRIGGER encoder will switch to BASIC OUTFADE. Here, you can modifiy the durations by turning the Encoder.

If no FADE or DELAY times are indicated, no values are saved to this CUE.

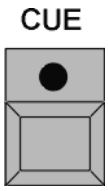
4.3.4 Copying Cues



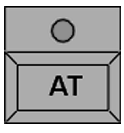
Press the COPY Button once (LED is on).



Press the SEQUENCE Button once (LED is on).
Using the keypad, enter the number of the Sequence from which Cues are to be copied.



Press the CUE Button once (LED is on).
Using the keypad, enter the number of the first Cue from which the copying is to start. If only one Cue is to be copied, continue with the AT Button.
Pressing the + button will copy the respective Cue indicated by the following number.
Pressing the THRU button on the keypad will copy the Cues **from...to** (including last Cue).
When pressing the – button, the Cue with the next number will **not** be copied.

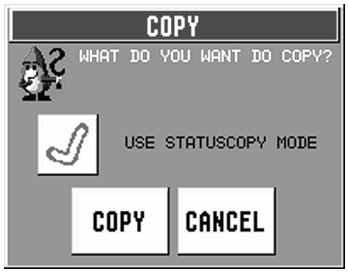


Press the AT button once (LED is on).

Enter the new number for the copied Cues using the keypad.

Example: The Cues are to be inserted between Cue 10 and Cue 11. Number these Cues e.g. as 10.1 (possible Cue numbers are 10.001 - 10.999). This way, up to 999 Cues can be inserted between two existing Cues.

Confirm with ENTER.



When copying **one** Cue, the COPY window will open.

After pressing this button, you can choose between:

Only the values and times actually saved to this Cue will be copied. The history will be disregarded.

The Cue will be copied as it would actually be realized on stage. That means, all previous steps will be taken into account and the result will be copied afterwards.

Pressing COPY will copy the Cue, CANCEL will abort the process.

When copying more than one Cue, **only the values and times actually saved to this Cue** will be copied. The history will be disregarded.

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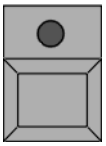
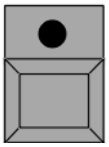
4.3.5 Moving Cues

MOVE



Press the MOVE Button once (LED is on).

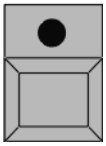
SEQUENCE



Press the SEQUENCE Button once (LED is on).

Using the keypad, enter the number of the Sequence in which Cues are to be moved.

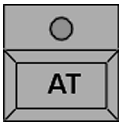
CUE



Press the CUE button once (LED is on).

Using the keypad, enter the number of the first Cue as of which the Cues are to be moved. If only one Cue is to be moved, continue with the AT button.

Pressing the + key will move the respective Cue indicated by the following number.
Pressing the THRU key on the keypad will move the Cues from...to **(including last Cue)**.
When pressing the – key, the Cue with the next numbe**r** will **not** be moved**.**
Press the AT button once (LED is on).

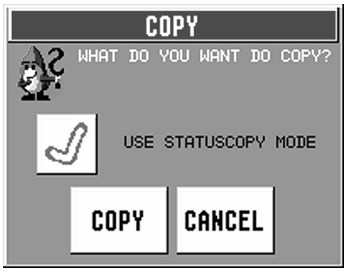


Enter the new number for the moved Cues using the keypad.

Example: The Cues are to be inserted between Cue 10 and Cue 11. Number these Cues e.g. as 10.1 (possible Cue numbers are 10.001 - 10.999).

This way, up to 999 Cues can be inserted between two existing Cues.

Confirm with ENTER.



When moving **one** Cue, the COPY window will open.

After pressing this button, you can choose between:

During the moving process, only the values and times actually saved to this Cue **will be copied**. The history will be disregarded.

The Cue will be moved as it would actually be realized on stage. That means, all previous steps will be taken into account and the result will be copied afterwards.

Pressing COPY will move the Cue, CANCEL will abort the process.

When moving more than one Cue, only the values and times actually saved to this Cue **will be copied.** The history will be disregarded.

4.3.6 Deleting and renumbering Cues

Make a right mouse click on the respective Cue in the NO. column.

The following window will open.

1 START LINE: Display of the first selected Cue. The number can be modified by clicking on it.

END LINE: Display of the last selected Cue. The number can be modified by clicking on it.

2 NEW START: Display of the first new number of the selected Cues. The number can be modified by clicking on it.
STEP WIDTH: Display of the steps, in which the Cues' new numbers will be placed. The number can be modified by clicking on it.

Deleting Cues

Select the Cue to be deleted. By pressing the DELETE button, the CUE will be deleted. If you want to delete not only one but several Cues, select the respective Cues. By pressing the DELETE button, the Cues will be deleted.

Renumbering Cues

Select the Cue to be renumbered. Enter the new number on the right side of "NEW START". By pressing the RENUMBER button, the Cue will be renumbered. If you want to renumber not only one but several Cues, select the respective Cues. Enter the new number for the first Cue on the right side of "NEW START". By pressing the RENUMBER button, the Cues will be renumbered.

4.3.7 Inserting LOOPs

Within a Sequence, you can allocate a Loop to a Cue. When this Cue is reached, it will be executed, then the Loop will be called up.
This process will either run over a preset period or for the number of Loops indicated.

Make a right mouse click on the respective Cue in the LOOP column. The SELECT LOOP-TARGET window will open. Select the Cue to which a jump is to be performed. The Cue will be listed in the top line.

Select the jump function by pressing the respective Button:
- With the LOOP (TIMED) Button, only jumps within the set time frame are performed.
- With the LOOP (COUNT) Button, the jump will be repeated as often as indicated.
- With the DELETE Button, you can delete the jump.

For the indicated jump, you can now determine the duration or number of jumps in the LOOPDELAY column by clicking on or entering the respective value.

Example: When you enter „5" in the TIMED cell, the jumps will be executed for 5 seconds. When you enter „5" in the COUNT cell, the jump will be repeated five times, before the Sequence will be continued.

4.3.8 Inserting Macros

Within a Sequence, a Macro can be called up by a Cue. As soon as this Cue is reached, the Marco will be executed. By setting a time frame, the Macro can be called up with an individual delay. ➡ **7.1** Creating and Programming Macros

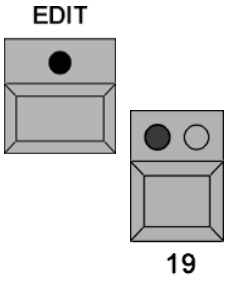
Make a right mouse click on the respective Cue in the LINK column. The SELECT MACRO window will open. Select the MACRO to be executed. The Macro will be displayed with its name or number.

For the selected Macro, you can now enter a time frame in the LI. DEL column. The Macro will only be executed after this time has ended, e.g. if you enter „5" in the LI. DEL column, the Macro will be executed after a delay of five seconds.

4.4. Editing Chasers

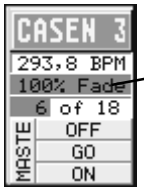
A Chaser is an automatically running sequence. During the editing process, you will be able to modify, add or delete **all** values of individual Cues. Speed, X-FADE and SNAP-DELAY times can be adapted globally.

Except as indicated in this chapter, there are three other ways:
➡ **4.1.2, 4.1.3, 4.1.4** Overwriting, expanding, removing Cues
➡ **4.3.4** Update Cues or Presets
➡ **5.3** EXECUTOR window



Press the EDIT button (LED is on).

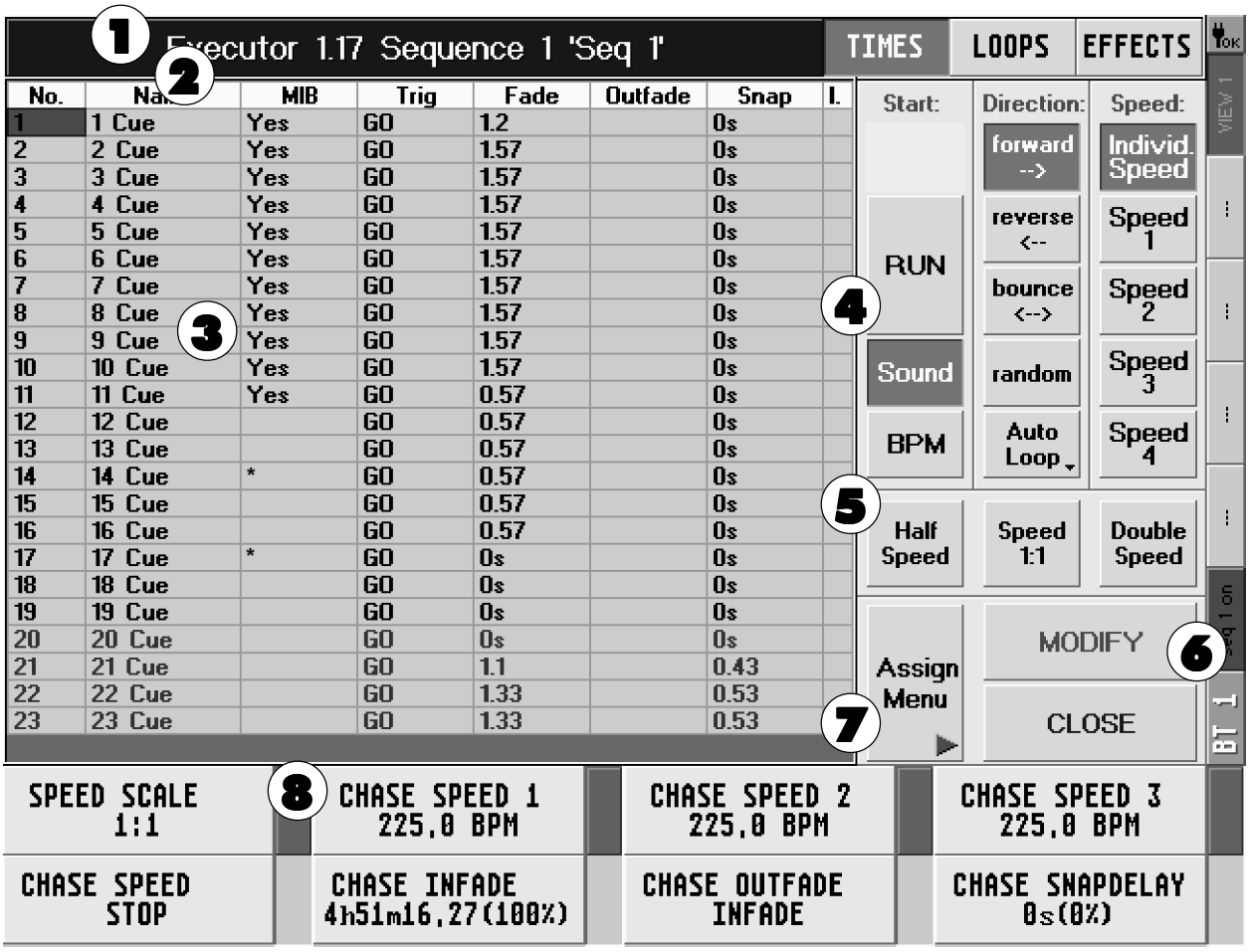
Select a Chaser with the respective EXECUTOR button.



Or:

Make a left mouse click into the chart of the small window above the EXECUTOR Fader.

The EDIT menu appears on the right TFT display, giving a listing of the individual cues.



1 The activated EXECUTOR fader or button is now listed in the headline, giving the page number and the name of sequence.

2 The functions of the columns are given in the second line.

- No.: Number of Cues
- NAME: Name of Cue
- MIB: Activate MIB (Move In Black function) individually for each cue. Activate it by selecting a cell and shortly pressing on the encoder on the right side of the display. Activation is confirmed by YES.

MIB can only be used in cells where a " * " is displayed.

- TRIGGER: Has no effect on Chaser

If the TIMES button on the title bar is pressed:

- FADE: Has no effect on Chaser
- OUTFADE: Has no effect on Chaser
- SNAP: Has no effect on Chaser
- I.FADE: Has no effect on Chaser
- I DELAY: Has no effect on Chaser

If the LOOPS button on the title bar is pressed:

- LOOP: Jumps to the respective CUE of indicated number upon activation, **without** calling this Cue up
- LOOPDELAY: The sequence of the LOOP function will be displayed
- LINK: The set Macro will be displayed
- LI. DEL: The set time will be displayed, **after** which the Macro will be called up

If the EFFECTS button on the title bar is pressed:

- EFFECTS: Display of the Effect calls

A second sheet will appear in the lower part of the display:

- No.: Number of the Effect Group
- NAME: Name of the Effect Group
- ACTION: Type of Effect call
- INTENS: Display of the defined size of the Effect Group
  F (Fade): If Y (YES) is displayed, the size will be faded in with the set fade time
- SPEED: Display of the defined speed of the Effect Group
  F (Fade): If Y (YES) is displayed, the speed will be faded in with the set fade time
- SOFT: Display of the set softness (softer fade in) of the effects
  F (Fade): If Y (YES) is displayed, the softness will be faded in with the set fade time

3 The chart will show all Cues of the Chaser.

4 With the help of the button you can define various sequences for the Chaser.

- GO: Call-up of the steps with the GO button. Fade and Delay time will be executed with the set time.
- RUN: Chaser runs with the set speed. Fade and Delay time will be adjusted in terms of percentage.
- SOUND: Call-up of the steps via a sound signal. Fade and Delay time will be executed with the set time.
- BPM: Call-up of the steps via the automatic recognition of **B**eats **P**er **M**inute. Fade and Delay time will be adjusted in terms of percentage.
- FORWARD: Chaser runs forward.
- REVERS: Chaser runs backwards.
- BOUNCE: Chaser runs forward, then backwards and so on.
- RANDOMLY: Chaser calls up individual steps on random basis.
- AUTO LOOP / SINGLE ON / SINGLE OFF (Switch over by pressing the button):
  On AUTO LOOP, after the last step, the Chaser will jump back to the first and continue. With SINGLE ON, the Chaser makes one run and stops at the last Cue. With SINGLE OFF, the Chaser makes one run and switches off after the last Cue.
- SPEED INDV.: On RUN, an individually set speed will be used.
- SPEED 1–4 : On RUN, the respective SPEED-Group will be used. These set speeds can be used for all Chasers.
  ➡ **5.1.10** Assigning the Special Master

5 Using the buttons, you can either divide or double the set speed.

HALF SPEED: Pressing 1x, the set speed will be divided in half – this can be done up to 8 times (Modification will be displayed above the left Encoder).

1:1 : Resets the speed to the set value.

DOUBLE SPEED: Pressing 1x, the set speed will be doubled – this can be done up to 8 times (Modification will be displayed above the left Encoder.

6 Values of individual Cues can be modified with the MODIFY-CUE button (STORE button flashes). ➡ **4.4.1** Modifying values of separate Chaser steps

7 This button will bring you to the ASSIGN menu. ➠ **5.2** ASSIGN menu

8 Description/labelling of the encoders, located below the TFT display.

- CHASE SPEED: The **individual** speed can be set with this Encoder.
  If one of the SPEED buttons 1 to 4 is pressed, you can set the speed of this SPEED group using this Encoder.

  SPEED SCALE: Pressing the CHASE SPEED encoder, this encoder will be switched to SPEED SCALE – now you can set the division or doubling of the speed with this Encoder.
- CHASE INFADE: Setting of the In-Fade time for FADE functions.

  CHASE SPEED 1: When pressing the CHASE INFADE encoder, this encoder will be switched to CHASE SPEED 1 – now you can set the speed for this group with this Encoder.
- CHASE OUTFADE: Setting the Out-Fade time for Dimmer Functions. (The OUTFADE time can be linked to the infade time; The display shows "INFADE").

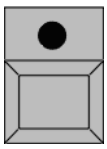
  CHASE SPEED 2: When pressing the CHASE OUTFADE encoder, this encoder will be switched to CHASE SPEED 2 – now you can set the speed for this group with this Encoder.
- SNAP DELAY: Setting the delay time of SNAP functions.

  CHASE SPEED 3: When pressing the SNAPDELAY encoder, this encoder will be switched to CHASE SPEED 3 – now you can set the speed for this group with this encoder.

4.4.1 Modifying values of separate Chaser steps

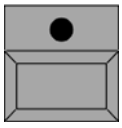
- Select the Cue to be modified (red cell).
- Press the MODIFY CUE button (The Cue will be displayed with a green background).
- In the FIXTURE or CHANNEL window, **all values of the Cue will now be called up or displayed (active, red).** At the same time, this Cue will be put out on stage.
- This cue can now be modified by either direct access or presets. ➠ **3.4** Direct Access to Fixtures (in the FIXTURE SHEET) / **3.5** Direct Access to Dimmer Channels (in the CHANNEL SHEET) and **3.7** Creating and calling up Presets

BLIND



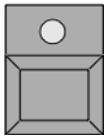
If the Cue is not to be seen on stage, activate the Blind function by pressing the BLIND button (integrated LED is on).

STORE



Press the STORE button once. The changed Cue is now saved.

CLEAR



Press the CLEAR button twice (Cue values will be deleted in the FIXTURE or CHANNEL window).

For modifying further Cues, select the respective Cue (Cue will be displayed on a green background).

Repeat all steps as described with the first cue and save with STORE.

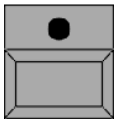
➠ **4.3.4** Copying Cues
➠ **4.3.5** Moving Cues
➠ **4.3.6** Deleting and renumbering Cues
➠ **4.3.7** Inserting LOOPs
➠ **4.3.8** Inserting Macros

4.5 Update Cue

When executing sequences, separate Cues can be modified and saved directly.

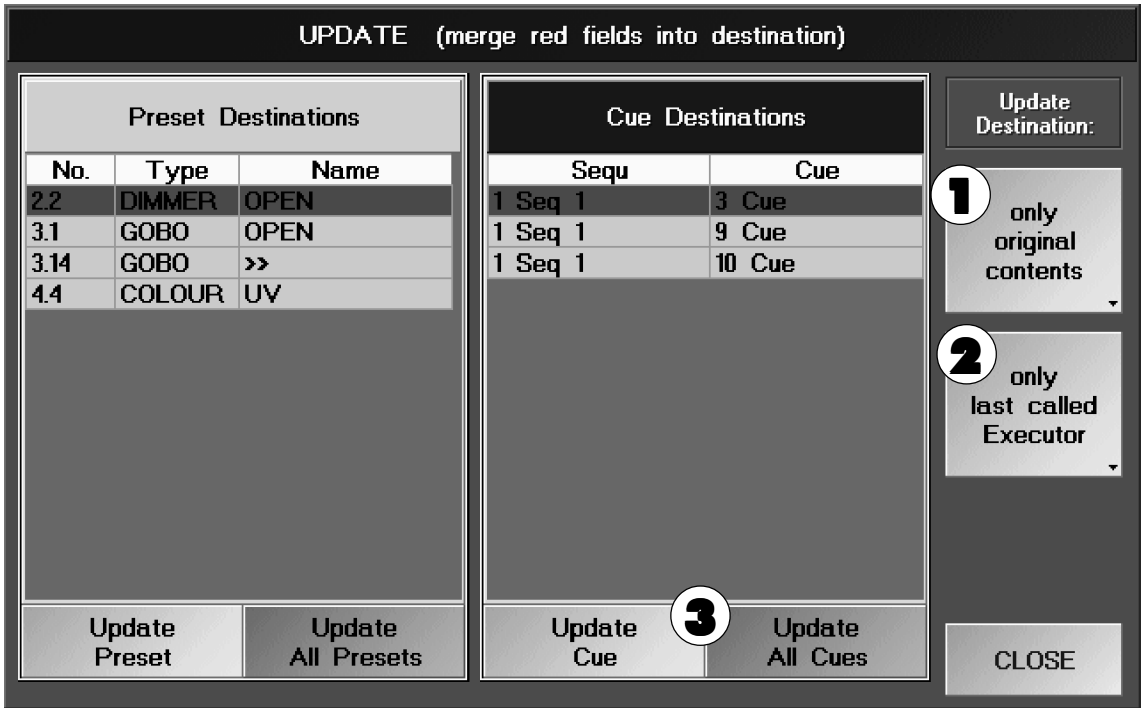
Call up the Cue to be modified. Modify the Cue by either direct access or via presets (UPDATE button LED is on). ➡ **3.4** Direct Access to Fixtures (in the FIXTURE SHEET) / **3.5** Direct Access to Dimmer Channels and **3.7** Creating and calling up Presets

UPDATE



Press the Update button once.

The UPDATE window will open



1 By shortly pressing this button, you can switch between "only original contents" and "add new contents"

Only original contents: Upon updating a cue, only the changes on those fixtures/channels will be saved, which have already been used in this cue.

Add new contents: When updating a cue, only the changes of those fixtures/channels will be saved which have already been used in this cue.

2 By shortly pressing this button, you can switch between "only last called Executor" and "all possible Executors".

Only last called Executor: The"Cue Destinations" chart only shows the last loaded cue.

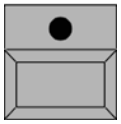
All possible Executors: The "Cue Destinations" chart shows all currently laoded cues of all executors.

3 Pressing the "Update Cue" button will update that cue being displayed with a red background. You can select another cue using the encoder.

Pressing the "Update All Cues" button will update all cues listed in the chart.

4.6 Update Preset

EDIT

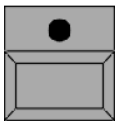


Press the EDIT button (LED is on).

Click on one of the Preset Buttons (the LED will blink, the preset button will display EDIT). The Preset is called up, the used fixtures/channels are being selected and the values will be activated.

Enter your required modifications here.

UPDATE



Press the UPDATE button.

A window appears, where you can either save the preset by pressing the OK button or cancel the modification by pressing CANCEL.

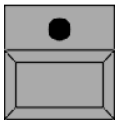
If you want to change more than one preset, you can select another preset by pressing the EDIT button right after the modification. Before you can actually change the new selected preset, a window will open, where you can save the 1st preset by pressing the OK button or where you can cancel the modification by pressing CANCEL. The second preset can only be called up after this.

Or:

When executing sequences you can modify and save single values of presets directly.

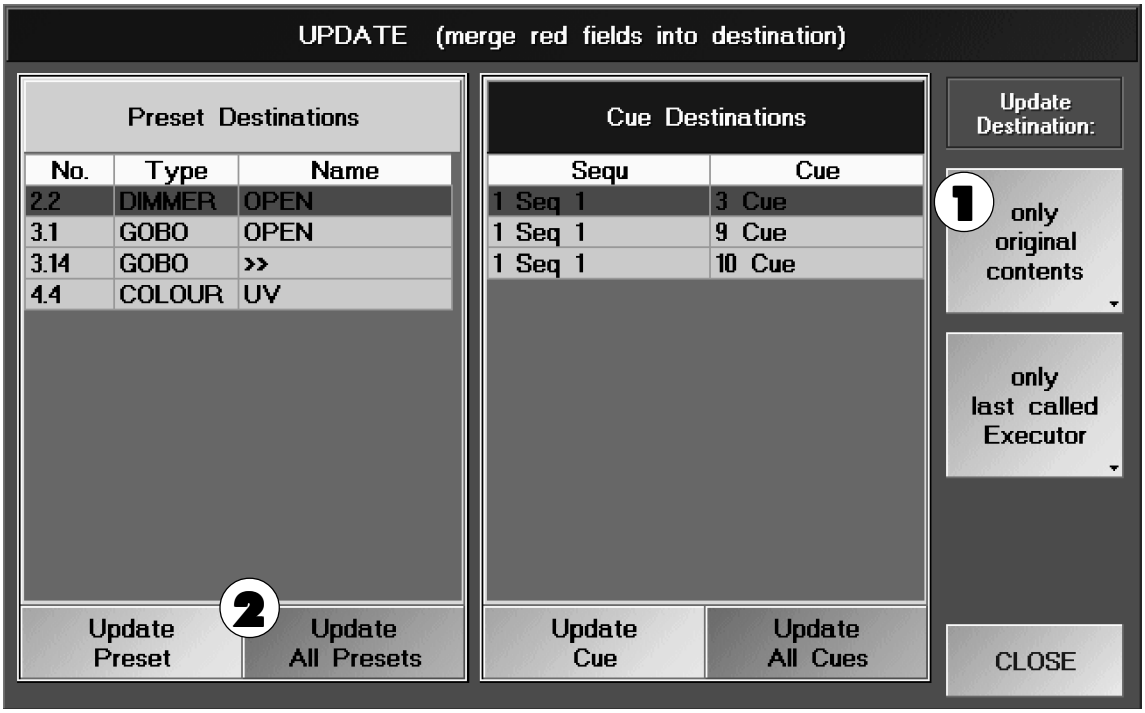
Activate a cue, in which presets are to be modified. Now you can modify this cue by direct access (the UPDATE button LED is on). ➡ **3.4** Accessing fixtures directly / **3.5** Accessing Dimmer Channels directly

UPDATE



Press the Update button 1x.

The UPDATE window will open.



1 By shortly pressing this button, you can switch between "only original contents" and "add new contents".

Only original contents: When updating a preset, only those changes on Fixtures/Channels will be saved, which have been used in this preset before.

Add new contents: When updating a preset, all changes on all Fixtures/Channels will be saved.

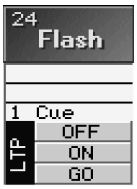
2 Pressing the "Update Preset" button will update that preset being displayed with a red background. You can select another preset using the encoder.

Pressing the "Update All Presets" button will update all presets listed in the chart.

5 Executing Cues, Sequences and Chasers

5.1 ASSIGN menu (Assignment to EXECUTOR)

The created Cues, Sequences or Effect Groups can be assigned to any EXECUTOR fader or button.



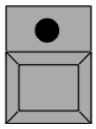
One way to enter the ASSIGN menu is by a mouse click or using the touch screen on the title bar of the EXECUTOR FADER window.

Or:

Press the ASSIGN button once (LED is on).

Select a Sequence in the Sequence Pool, or an Effect Group in the Effect Pool.

ASSIGN



Press the EXECUTOR FADER or EXECUTOR button, to which you want to assign a Sequence or Chaser.

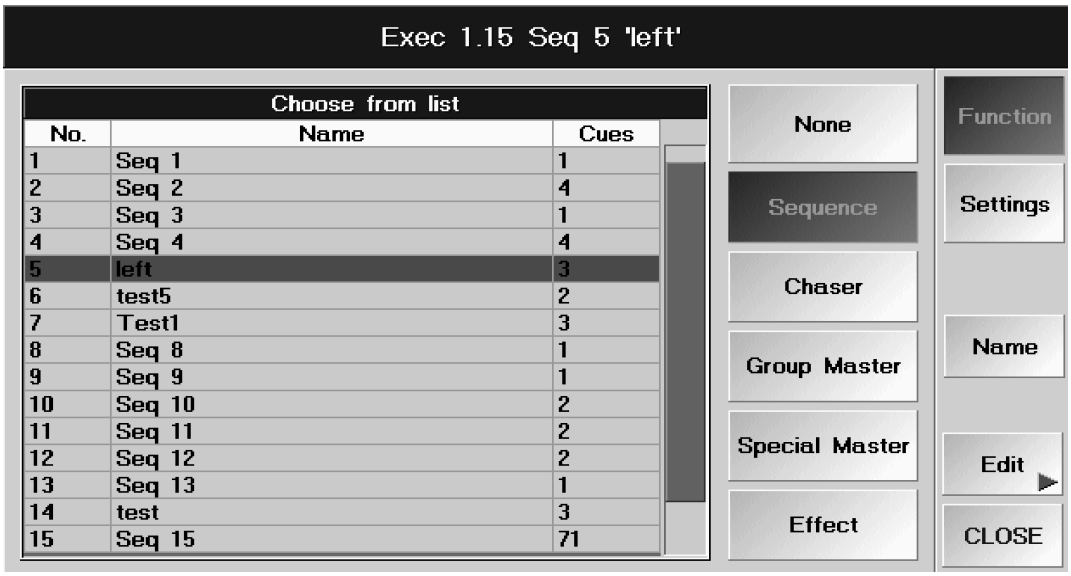
Or:

Press the ASSIGN button once (LED is on).

Press the EXECUTOR FADER or EXECUTOR button, for which a Sequence or Chaser is to be created. The ASSIGN menu will appear in the middle TFT display.

Another way to enter the ASSIGN menu is via the EDIT menu.

The title bar will display the selected EXECUTOR FADER or BUTTON.



5.1.1 Assigning Sequences or Effect Groups

The "Function" button must be activated (dark background)..

By pressing the CHASER, SEQUENCE or EFFECT button, all created Sequences will be listed in the Sheet. Select the Sequence or Effect Group to be assigned. Assigned Sequences or Effect Groups are displayed in red.

The CUES column shows the number of Cues in the individual Sequences.

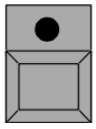
By pressing the button "Edit", you can customize the assigned Sequence or Effect Group in the EDIT menu. ➡ **4.3** or **4.4** Editing Cues, Sequences or Chasers. ➡ **6.2** Editing Effect Groups

5.1.2 Changing Sequence Names

By pushing the button "Name" the name of the sequence assigned to the executor can be changed by keyboard.

or:

ASSIGN



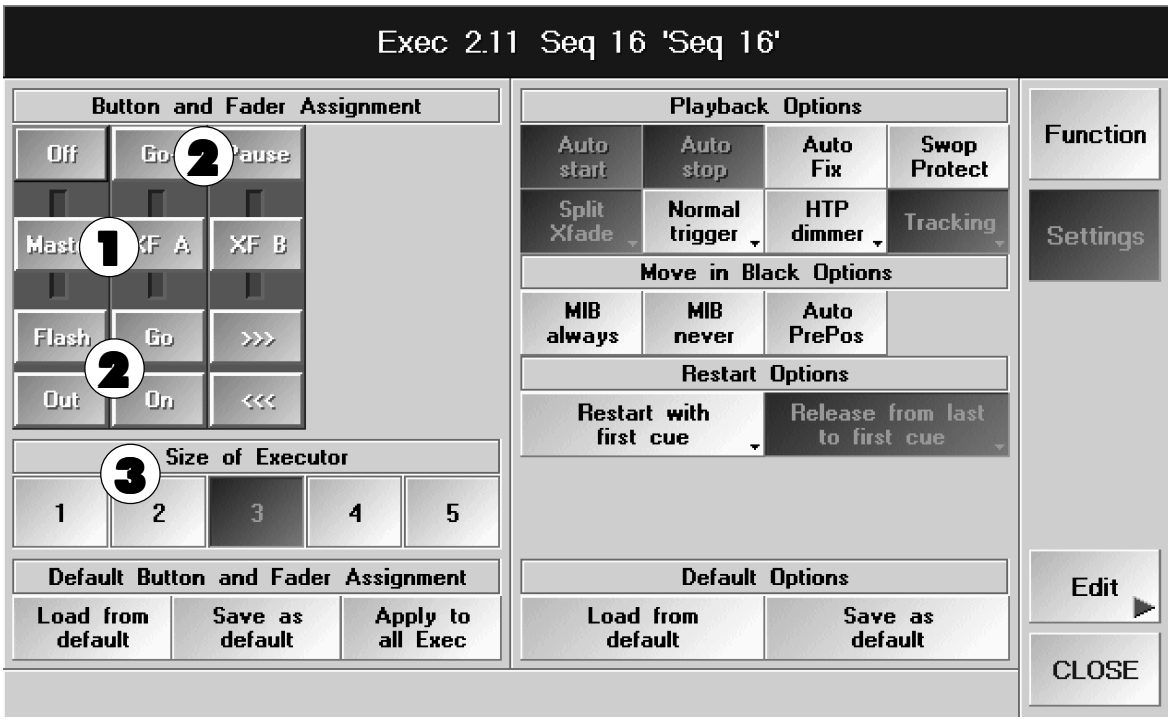
Push ASSIGN button 2x (LED is on).

Push the executor button, where the name of the sequence should be changed.

A window appears, where you can now enter the new name.

5.1.3 Changing Buttons and Faders

The "Settings" button must be activated (dark background).



1 When clicking on the FADER symbol button, a selection will appear in which you can assign the respective function to the Fader by another mouse click.

- Master: The Fader controls all dimmer values of this Sequence.
- Swap: With the Fader, the sequence is faded in and **all** dimmer values used in this sequence are set to "0"

It is only possible to use a SWAP *or* Master fader.

- FADE: With the Fader, the fade-in time can be set for the FADE function, when using Chasers.
- Speed: The Chaser speed can be set with the Fader.
- Xfade: With the Fader, you can fade in to the next step.
- XF A: If Split Crossfade is active, you can fade out the currently called up Cue when pushing the fader upwards or downwards (➡ **item** 5).
  If Split Crossfade is **not active**, you can fade out to the darkening Dimmer channels of the next Cue when pushing the fader upwards or downwards.
- XF B: If Split Crossfade is active, you can use the Fader to fade in the next Cue when pushing the fader upwards or downwards (➡ **item 5**).
  If Split Crossfade is **not active**, you can fade out to the next Cue and to the brightening Dimmer channels when pushing the fader upwards or downwards.
- Empty: Fader has no function.
- Rate: Using the Fader, you can change all fade and delay times for sequences. if the fader is on a medium position, all times will be executed in the normal way. Using the RATE 1 button, you can automatically set the Fader to the medium position.

2 By a click on the respective BUTTON symbol, a selection will appear in which any button can be allocated with different functions.

- Go: The next step will be called up with all programmed FADE and DELAY times.
- Go–: For sequences, the previous step is called up and all changes effected on previous Cues are executed (full tracking). At the same time, all programmed FADE and DELAY times will be executed. For Chasers, the running direction will be reversed.
- Pause: Sequence or Chaser will be interrupted; continue with GO+ or GO–.
- On: Switches the Executor on and starts the sequence or brings it back, if it was overwritten (LPT).
- Off: Switches the Executor off.
- Rate 1: Puts the RATE FADER to mid position (➠ **item 3 RATE Fader**).
- Learn: Direct entering of the Chaser speed. When pressing this button at least three times, the Chaser speed is set.
- <<<: Call-up of the previous step without FADE or SNAP times.
- >>>: Call-up of the next step without FADE or SNAP times.
- Temp: Cue, Chaser or Sequence is activated as long as button is pressed. Upon releasing the button, previous condition will be restored.
- Top: Resets the Sequence to the first step.
- Empty: Button has no function.
- Flash: Sets the Dimmer value to 100%, starts the sequence, if not already activated.
- Out: To hide the dimmer values (temporarily).
- Toggle: To switch on and off the respective Cue, Sequence or Chaser.
- Fix: Will fix sequence or chaser on this executor, even when switching PAGES here (this will be displayed by an orange background in the small EXECUTOR window).
- Load: Pressing the button on the right TFT display will open a chart for this sequence where you can select and directly load a cue (LOAD CUE). Start the cue using the GO button.
- Select: Lays this executor down as Master Sequence.
- Swop: Cue, Chaser or Sequence is activated, as long as button is pushed. **All** other dimmer channels are faded out, except with executors, where „Swop Protected" has been activated.

3 With the Size of Executor buttons 1 – 5, you can define whether it should be possible to use one to five Faders for your operations with EXECUTOR FADERs, and whether one to five buttons could be used for EXECUTOR BUTTONS. The respective titles will be displayed on the TFT display above the EXECUTOR FADERS. When the LIST function is active, the function of the EXECUTOR buttons will be displayed above these buttons (press LIST button).

Default Button and Fader Assignment

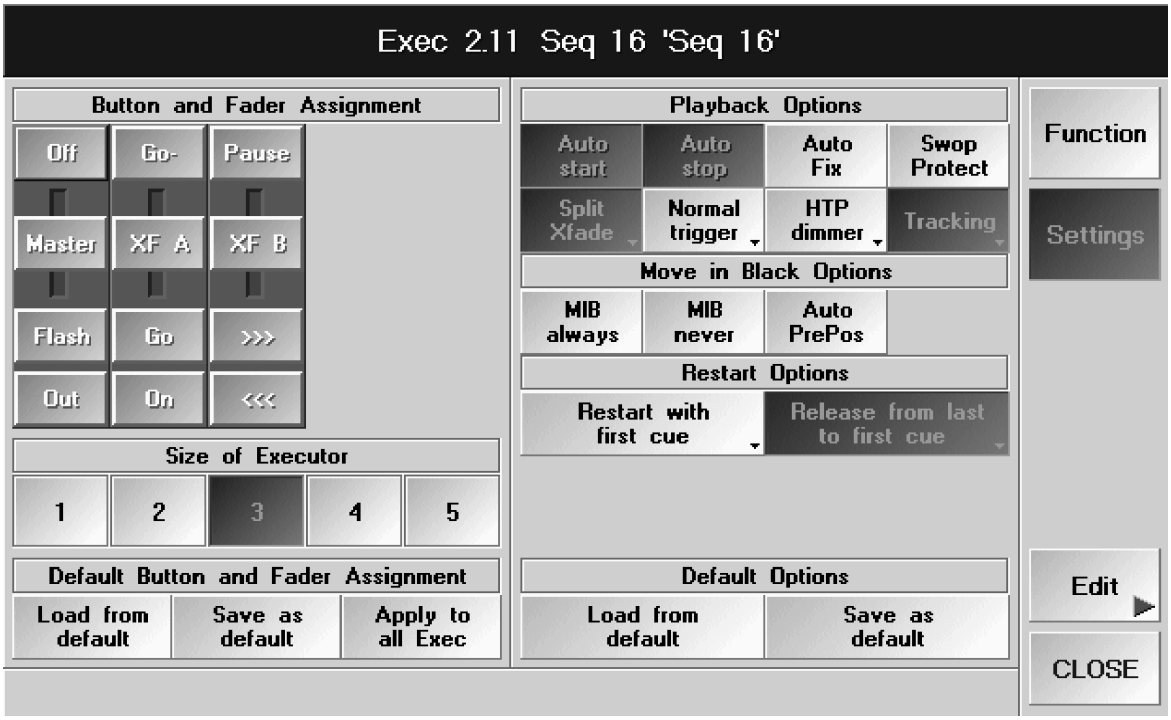
Pressing the "Save as default" button will save the current settings as default settings in the Default Button/Fader menu. For each option (1-5 Faders or 1-5 Buttons, Sequences or Chasers), one individual setting will be saved.

Pressing the "Load from default" button will load the saved default settings and use them for this Executor.

Pressing the "Apply to all Exec" will overwrite **all** Fader or Button Executors. Prerequisite is, however, an identical number of Fader and Button assignments.

5.1.4Playback Options

The "Settings" button must be pressed (dark background).



If you press the "Auto start" button (background dark gray), the Sequence or Chaser will be automatically started when pushing the Master Fader upwards (item 6).

If the "Auto stop" button is pressed (dark gray background), the sequence or Chaser will automatically be switched off when pushing the master fader downwards to the lower stop.

If the "Auto Fix" button is pressed (dark background) and the Sequence or Chaser is started, this Executor will be locked to that position when switching the Executor pages and will **only be released after switching it off**. If an Executor is saved at that position on another page, this Executor will appear and can be used again only after switching the locked Executor off.

If the "Swop Protected" button is pressed, the Dimmers of this Sequence will not be switched off, when **another** Sequence is called up using Swop.

If the TRACKING button is pressed (dark background), the Sequence will be executed in Tracking mode. If the button is not pressed, the Sequence will be executed in Non Tracking mode.

TRACKING and NON TRACKING refer to all Dimmer values *only*.

The **TRACKING** mode is intended for **theatre applications**.

Dimmer channels that were called up in a Cue, remain unchanged for each further Cue, until they are modified or overwritten by a further Cue (LTP principle). Therefore, you do not have to program them in later steps.

TIP Example: At the beginning of a Sequence, Dimmer channels are set to 80 percent. Let's assume that the setting is to be used for several steps. As long as the channels are not modified, they will remain at 80 percent. When working with this Sequence, you may recognize, however, that the channel setting should only be at 70 percent. Now, you only have to change this channel setting **once**; all further Cues will automatically be "modified" to 70 percent.

The **NON TRACKING** mode is the „Standard SHOW Mode". As opposed to TRACKING (Theatre mode), all dimmer channels that are **not activated (not red)** will be saved with "0%" or called up with "0%", respectively.

That means: This is to ensure that in the next step, the unused Dimmer channels will be set to 0 percent. ➡ **5.4** TRACKING window

Button A/B or Split Xfade: If the "Split Xfade" button is pressed (displayed in dark), this function is active (➡ **item 5.1.3** Changing Faders, Fader XF A and XF B).

Button Normal trigger If the „Normal Trigger" button is pressed, this Sequence/Chaser will be execute with the saved calls. Pressing this button briefly, it will switch to „Trigger is GO", where after the Sequence/Chaser can only be controlled by the GO button.

LTP Dimmers button pressed: When activating this sequence, the dimmer channels of this sequence will be called up as previously programmed. They will overwrite all other dimmer channels of those Cues that were also called up in LTP mode. HTP Executors remain unchanged.

Move in Black Options

MIB Always button pressed: Loading a cue in a sequence where the dimmer values of the fixtures are set at 0 and loading in the following steps, for example, a different position, color or gobo, etc., these channels will already be executed upon calling up the cue. You can also set a FADE or DELAY time for these channels (➡ **2.14** Settings in the Defaults Menu / Playback Timing).

MIB Never button pressed: Separately activated cues for MIB are being completely switched off (➡ **4.3** Edit Sequences).

Auto PrePos button pressed: For Fixtures with **inactive Dimmers**, all other channels will be executed without programmed fade times when calling up the first Cue of this Sequence. When deactivating this sequence, the channels will be altered only after the respective dimmer has been set to 0.

RESTART OPTIONS

If the "Restart with first cue" button is pressed, the Sequence will, after switching off, start again at the **first** step.

If the "Restart with actual cue" button is pressed, the Sequence will, after switching off, start again at the **last called** step.

If the "Restart with next cue" button is pressed, the Sequence will, after switching off, start again at the **next** step.

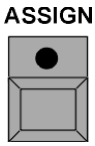
If the "Release from first step" button is pressed, all functions, previously used in this sequence, will be switched off after execution of the last cue and immediate call up of the first cue. The execution of this sequence now behaves in a way, as if the sequence is being switched off after the last cue and being switched on again.

Defaults Options

Pressing the SAVE AS DEFAULT button will save the current settings as default settings.

Pressing the LOAD FROM DEFAULT button will load the saved default settings and use them for this Executor.

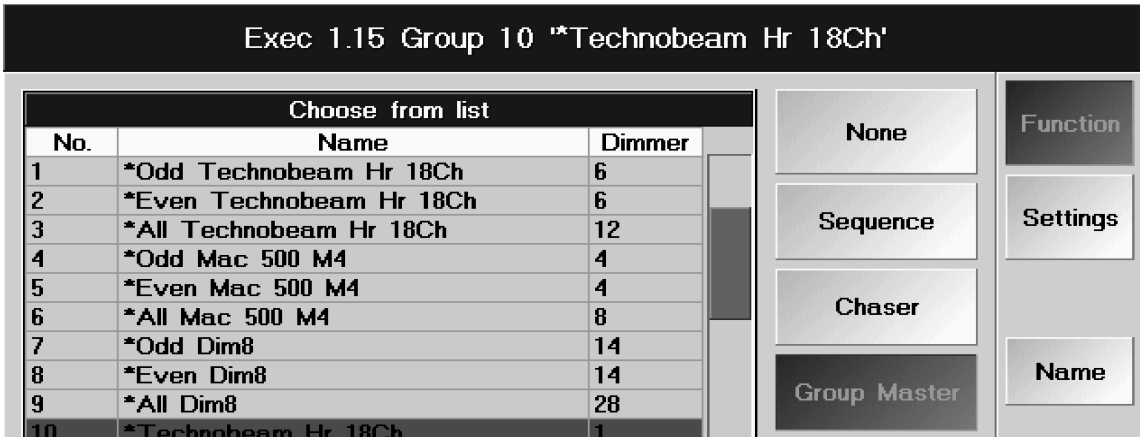
5.1.5 Assigning Group Masters



Press the ASSIGN button once (LED is on).
Select a group in the GROUP Pool.
Press an EXECUTOR FADER button, to which the group is to be assigned to.

Or: Using the ASSIGN menu:

The "Function" button must be activated (dark background).

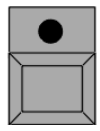


If the GROUP MASTER button is pressed, the Sheet will display all created groups.

Select the group to be assigned. Assigned groups are displayed in red. The DIMMER column will show the number of Dimmer channels used by the Fixtures and Dimmers.

Changing Group Names

By pushing the button "Name" the name of the group assigned to the executor can be changed by keyboard.



or:

Push ASSIGNbutton 2x (LED is on).

Push the executor button, where the name of the group should be changed.
A window appears, where you can now enter the new name.

or:

in Group Pool ➡ **3.3** Creating and calling up Fixtures and Dimmer GROUPS

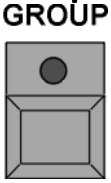
Submaster Options

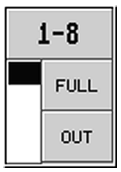
The "Settings" button must be pressed (dark background).

If the POSITIVE ENABLE button is pressed, this Group Master is the Master Fader for all dimmer channels of this group.

If a Group Master is set as INHIBIT Master (NEGATIVE INHIBIT button is pressed) for a group also including Fixtures or dimmer channels from other groups, the INHIBIT Master must also be pushed up, to be able to use the overlapping channels. The INHIBIT Master can also be used as Master Fader for all other Group Masters.

Group Overview





Pressing the GROUP button twice will open an overview in the right display showing all assigned Group Masters. In this overview, every Group Master is displayed with a separate small window.

The upper button contains the group name. Clicking on this button will open the Page on which it is saved. The display above the Fader shows „HERE".

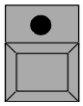
With the FULL button, you can set the Master to 100%. With the OUT button, you can set the Master to „0". The yellow status indicator next to the buttons will give you the currently set value for the respective Fader.

Pressing the ALL FULL button in the title bar will set all group masters to 100%.

Pressing the CLOSE button will close this window.

5.1.6 Assigning Special Masters

ASSIGN



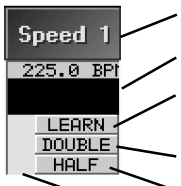
Press the ASSIGN button once (LED is on).
Press an EXECUTOR FADER button, to which a Special Master is to be assigned to.

The "Function" button must be pressed (dark background).

If the SPECIAL MASTER button is pressed, all CHASER SPEED Masters will be displayed.

Select the CHASER SPEED to be assigned.

The following window will appear above the assigned Executor fader:

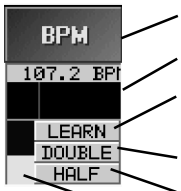


Here, the name of the Speed Group will be displayed.
The speed is displayed here.
With the upper button, you can enter a speed directly. By pressing the button at least twice, you can set the speed.
With the button below the fader, you can double the speed.
With the lower button, you can halve the speed.
The speed of the Speed Group can be adjusted by using the respective Fader.

If **SOUND : BPM** is selected, you can adjust the given BPM value in the Sound menu using the fader (➡ **2.14** Sound Signal Settings). The Sound Menu will open by touching the lower part of this window (not the headline).

or:

If **SOUND : HOLD** is selected, you can adjust the given HOLD value in the Sound menu using the fader (➡ **2.14** Sound Signal Settings). The Sound Menu will open by touching the lower part of this window (not the headline).

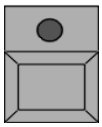


Here the name of the fader function will be displayed.
The speed is displayed here.
With the upper button, you can enter a speed directly. By pressing the button at least twice you can set the speed.
With the button below the fader you can double the speed.
With the lower button you can halve the speed.
You can adjust the BPM / HOLD value with the fader.

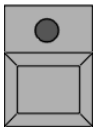
5.1.7 Moving, copying or deleting Executors

MOVE

Press the MOVE button once to move Executors (LED is on).

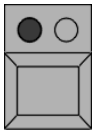


COPY



Or:

Press the COPY button once to copy Executors (LED is on).



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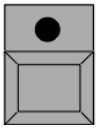
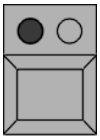
To move or copy an Executor button or a window above the Executor, press or click on it once.

Pressing another Executor button or window above the Executor will set the new position.

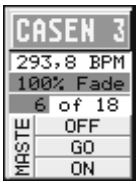
DELETE

Press the DELETE button once to delete Executors (LED is on).





19



Press an Executor button or on a window above the Executor once.

If there are programmed Macros or Timecode Shows, in which the moved or deleted Executors were to be used, these assignments may get lost!

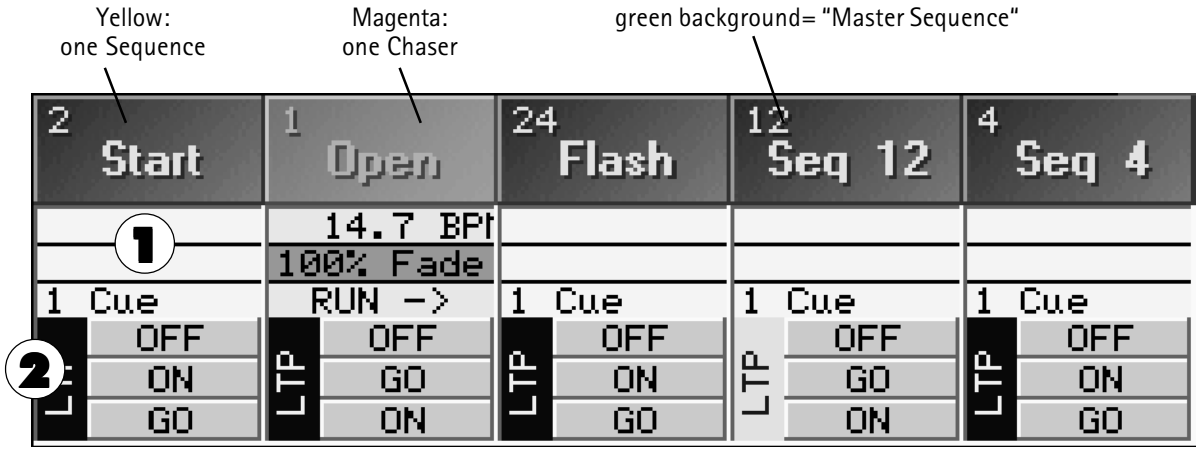
5.2 Small EXECUTOR Window

grandMA:

These windows are located above every EXECUTOR FADER or, after pressing the LIST button twice, in the right TFT display for the EXECUTOR buttons.

***grandMA* light und ultra-light:**

After pressing the LIST FADERS button, these windows will be displayed above each of the EXECUTOR FADERS.
After pressing the LIST BUTTONS button twice, they will be displayed on the TFT display for the EXECUTOR buttons.



1 The name of the assigned sequence is displayed in the headline. The shown figure displays the number of the sequence.

Clicking on the **Sheet** (not into the header) on the touc screen or using the left mouse button will open the EDIT menu. ➡ **4.3** Editing Sequences or **4.4** Editing Chasers

Clicking on the **title bar** on the touchscreen or using a mouse button will open the ASSIGN menu. ➡ **5.1** ASSIGN menu

Furthermore, an extract from the Cue Sheet will be displayed:

Sequence: The Outfade time of the last Cue will be displayed by a blue bar in the upper cell.

The Infade time of the cue will be displayed in the second cell.
The next Cue will be displayed in the next cell below.

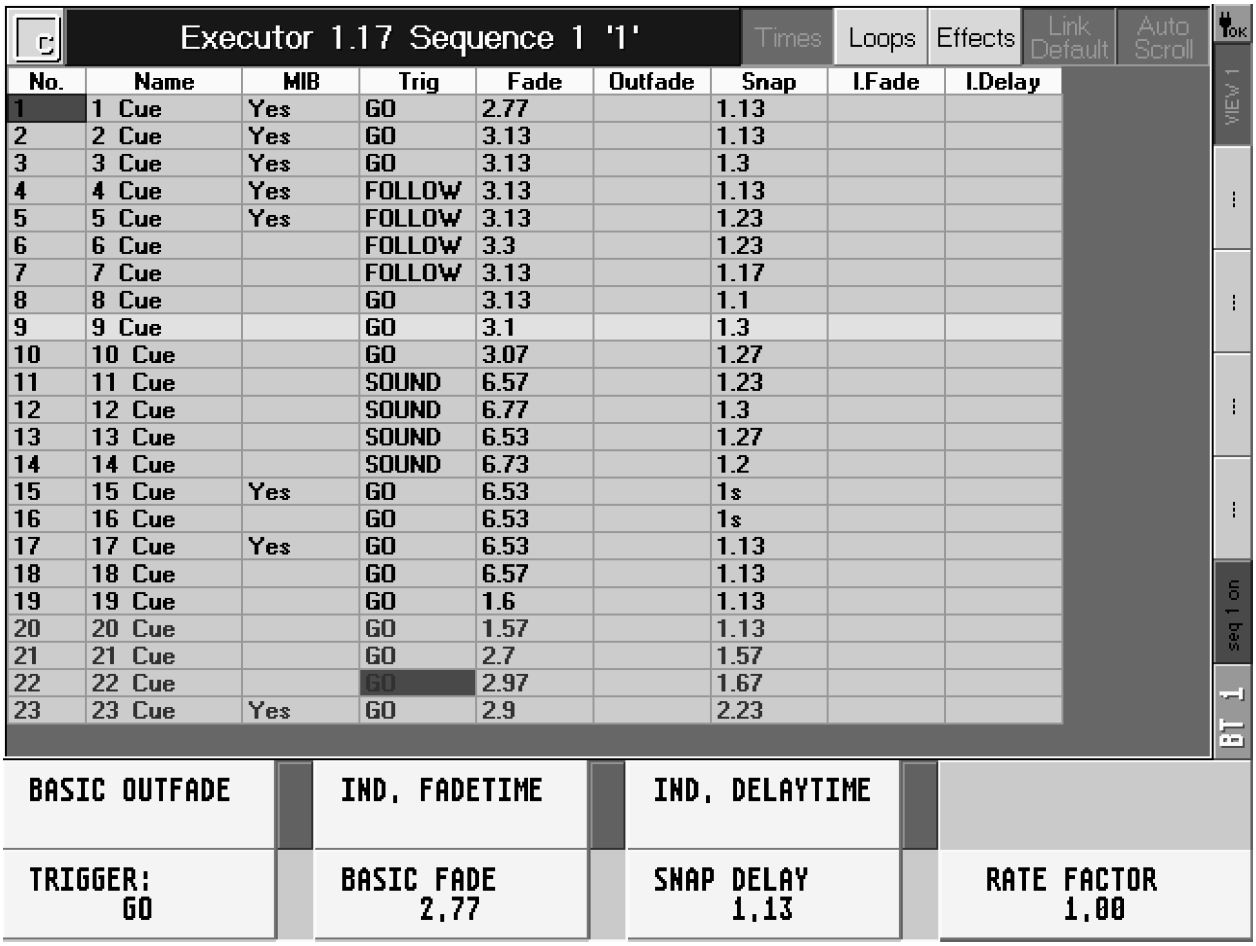
Chaser: The speed will be displayed in the upper cell.
The Fade time in percentage will be displayed in the second cell and also as green bar.
As long as the Chaser is not activated, you will find the type of activation in the bottom line. During execution, the number of Cues already done will be displayed on the left while on the right side you will see the total number of all Cues, which is also being displayed symbolically by a bar.

2 Here, the individual Fader and Button functions are displayed:

- On the left side, the Fader function is displayed. The yellow status indicator will give you the Fader value currently set.
- The function for the button above the encoder is displayed on top.
- The function of the upper button below the Fader is displayed in the middle cell.
- And the function of the lower button below the Fader is displayed in the lower cell.

5.3 EXECUTOR Window

In the EXECUTOR window, you can have the sequence of one FADER or BUTTON displayed, while you have the possibility for modifications. ➡ **3.1** Creating a window



No.	Name	MIB	Trig	Fade	Outfade	Snap	I.Fade	I.Delay
1	1 Cue	Yes	GO	2.77		1.13		
2	2 Cue	Yes	GO	3.13		1.13		
3	3 Cue	Yes	GO	3.13		1.3		
4	4 Cue	Yes	FOLLOW	3.13		1.13		
5	5 Cue	Yes	FOLLOW	3.13		1.23		
6	6 Cue		FOLLOW	3.3		1.23		
7	7 Cue		FOLLOW	3.13		1.17		
8	8 Cue		GO	3.13		1.1		
9	9 Cue		GO	3.1		1.3		
10	10 Cue		GO	3.07		1.27		
11	11 Cue		SOUND	6.57		1.23		
12	12 Cue		SOUND	6.77		1.3		
13	13 Cue		SOUND	6.53		1.27		
14	14 Cue		SOUND	6.73		1.2		
15	15 Cue	Yes	GO	6.53		1s		
16	16 Cue		GO	6.53		1s		
17	17 Cue	Yes	GO	6.53		1.13		
18	18 Cue		GO	6.57		1.13		
19	19 Cue		GO	1.6		1.13		
20	20 Cue		GO	1.57		1.13		
21	21 Cue		GO	2.7		1.57		
22	22 Cue		GO	2.97		1.67		
23	23 Cue	Yes	GO	2.9		2.23		

Touch the touchscreen on the left corner of the title bar.

Or:

With a right mouse click on the title bar, you can open the EXECUTOR SHEET OPTIONS window.

In this EXECUTOR window, you can select the respective Sequence by clicking on it. With the FONT SIZE button, you can switch the font size used in this window between LARGE and SMALL. With the DELETE WINDOW button, you can delete the Executor window or close the OPTIONS window using the CLOSE button.

In this window, you can watch the progress of the sequence; the currently called-up Cue will be displayed by a yellow background. Trigger calls, FADE or DELAY times can be modified directly.

By clicking on a Cue listed in the Sheet (indicated by a red cell), the possible Cue settings appear in the right display above the Encoders. Now, you can use the Encoders to modify the individual values for the selected Cue.

Using the „RATE FACTOR" Encoder, you can temporarily adjust all FADE and DELAY times. If the Sequence is switched off, the RATE FACTOR will automatically be set to 1.

If the LOOPS button is pressed, the programmed jumps and Macros will be displayed in the Sheet. If the EFFECTS button is pressed, the calls of the Effect Groups are displayed. ➡ **4.3** Editing Sequences

If the LINK DEFAULT button of the title bar is pressed, the default sequence will automatically be transferred to the EXECUTOR window when changing the default sequence. (Assigning the Default sequence ➡ **1.7** Layout and Controls (items 9 and 10))

If you press the AUTO SCROLL button, the Sheet will be automatically moved upwards/downwards when working on a larger Sequence.

5.4 TRACKING Window

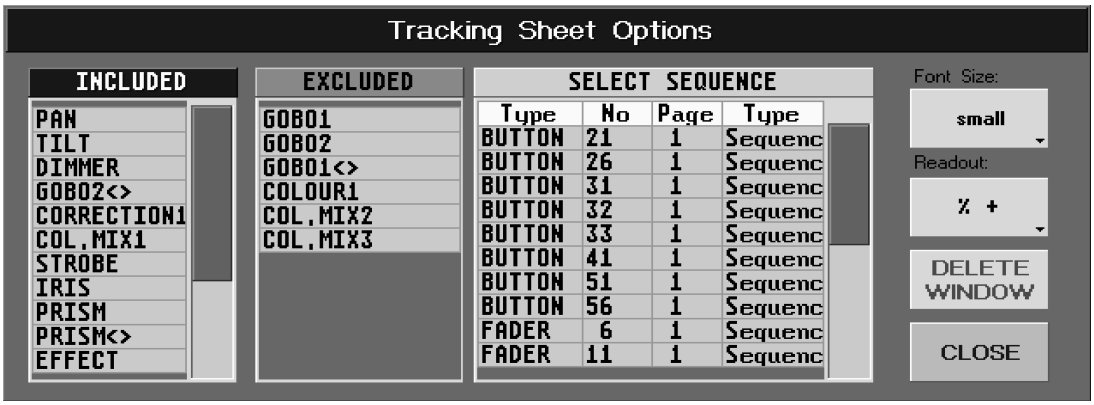
In the Tracking window, all values and times/durations of a Sequence can be displayed. Here, all values and times/durations can be reviewed and modified.

Create a Tracking Sheet. ➡ **3.1** Creating windows

Touch the touchscreen on the left corner of the title bar.

Or:

With a right mouse click on the title bar, you can open the TRACKINGSHEET OPTIONS window.

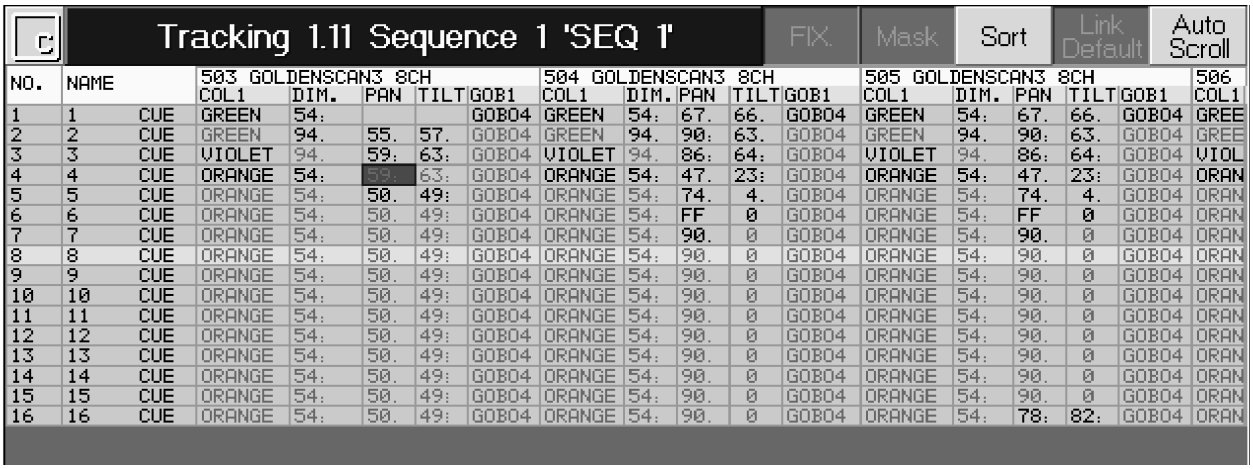


In this window, you can select sequences by clicking on the respective ones.

In the INCLUDED Sheet, all functions of the Fixtures used in this Sequence are displayed. By clicking on a function, you can move it into the EXCLUDED sheet. Functions displayed in this Sheet will **not** be displayed in this Tracking Sheet. With this function, you obtain a better overview for the Tracking Sheet.
With the FONT SIZE button, you can switch the font size used in this window between LARGE and SMALL.

By pressing the % button (DEC or HEX) you can switch the display of values between percent, decimal or hexadecimal values.

With the DELETE WINDOW button, you can delete the Executor window or close the OPTIONS window using the CLOSE button.


Tracking 1.11 Sequence 1 'SEQ 1'
FIX.
Mask
Sort
Link Default
Auto Scroll
NO. NAME
503 GOLDENSCAN3 8CH
504 GOLDENSCAN3 8CH
505 GOLDENSCAN3 8CH
506
COL1 DIM. PAN TILT GOB1
1 1 CUE GREEN 54: GOBO4 GREEN 54: 67. 66. GOBO4 GREEN 54: 67. 66. GOBO4 GREE
2 2 CUE GREEN 94. 55. 57. GOBO4 GREEN 94. 90: 63. GOBO4 GREEN 94. 90: 63. GOBO4 GREE
3 3 CUE VIOLET 94. 59. 63: GOBO4 VIOLET 94. 86: 64. GOBO4 VIOLET 94. 86: 64. GOBO4 VIOL
4 4 CUE ORANGE 54: 59. 63: GOBO4 ORANGE 54: 47. 23: GOBO4 ORANGE 54: 47. 23: GOBO4 ORAN
5 5 CUE ORANGE 54: 50. 49: GOBO4 ORANGE 54: 74. 4. GOBO4 ORANGE 54: 74. 4. GOBO4 ORAN
6 6 CUE ORANGE 54: 50. 49: GOBO4 ORANGE 54: FF 0 GOBO4 ORANGE 54: FF 0 GOBO4 ORAN
7 7 CUE ORANGE 54: 50. 49: GOBO4 ORANGE 54: 90. 0 GOBO4 ORANGE 54: 90. 0 GOBO4 ORAN
8 8 CUE ORANGE 54: 50. 49: GOBO4 ORANGE 54: 90. 0 GOBO4 ORANGE 54: 90. 0 GOBO4 ORAN
9 9 CUE ORANGE 54: 50. 49: GOBO4 ORANGE 54: 90. 0 GOBO4 ORANGE 54: 90. 0 GOBO4 ORAN
10 10 CUE ORANGE 54: 50. 49: GOBO4 ORANGE 54: 90. 0 GOBO4 ORANGE 54: 90. 0 GOBO4 ORAN
11 11 CUE ORANGE 54: 50. 49: GOBO4 ORANGE 54: 90. 0 GOBO4 ORANGE 54: 90. 0 GOBO4 ORAN
12 12 CUE ORANGE 54: 50. 49: GOBO4 ORANGE 54: 90. 0 GOBO4 ORANGE 54: 90. 0 GOBO4 ORAN
13 13 CUE ORANGE 54: 50. 49: GOBO4 ORANGE 54: 90. 0 GOBO4 ORANGE 54: 90. 0 GOBO4 ORAN
14 14 CUE ORANGE 54: 50. 49: GOBO4 ORANGE 54: 90. 0 GOBO4 ORANGE 54: 90. 0 GOBO4 ORAN
15 15 CUE ORANGE 54: 50. 49: GOBO4 ORANGE 54: 90. 0 GOBO4 ORANGE 54: 90. 0 GOBO4 ORAN
16 16 CUE ORANGE 54: 50. 49: GOBO4 ORANGE 54: 90. 0 GOBO4 ORANGE 54: 78: 82: GOBO4 ORAN

In this window, you can watch the progress of the sequence; the currently called-up Cue will be displayed by a yellow background.

If the FIX button is pressed (dark background), all **selected** Fixture functions will be displayed first in the Sheet.

If the button is not pressed (indicated by a CHA), the Sheet will display all functions **regardless of their selections**. When selecting presets, the Fixtures/Dimmers will be sorted accordingly in the Tracking Sheet.

If the MASK button is pressed, the INCLUDED/EXCLUDED functions will be activated in the OPTIONS menu.

If the SORT button is pressed (dark appearance), the Fixtures/Dimmers will be sorted by selection and function. When selecting groups or presets, the Fixtures/Dimmers will be sorted accordingly in the Tracking Sheet.

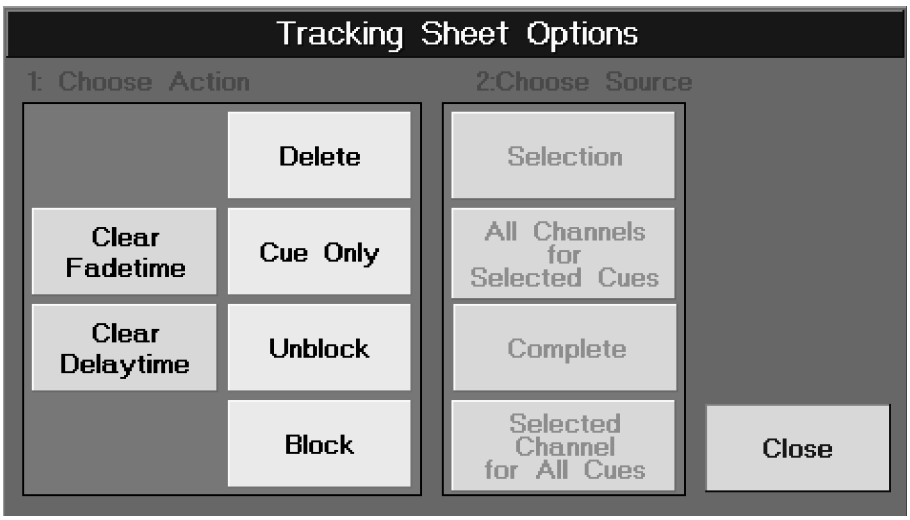
If the LINK DEFAULT button of the title bar is pressed, the default sequence will automatically be transferred to the EXECUTOR window when changing the default sequence. (Assigning the Default sequence ➡ **1.7** Layout and Controls (items 9 and 10))

If the AUTO SCROLL button is pressed, the Sheet will be automatically moved upwards/downwards when working on a larger Sequence.

Using the left mouse button, you can select values or times/durations (also by using the "lasso function"). Values and times/durations can be modified using the middle mouse button. If you make a middle mouse click on the selected value and then shortly push the right mouse button, a window will open where you can now enter values or load presets directly.
To modify presets, you have to make a middle mouse click on the preset. A window will open where you can enter values or load other presets direclty.

This is one of only a few menus which makes sense to be used only by mouse!

The following window will open on a right mouse click on the selected values.



Proceed with one of the following options:
1. Selecting one or more cells in the Tracking Sheet
2. Choosing the DELETE, CUE ONLY, UNBLOCK or BLOCK command
3. Executing the command when activating the selection (Selection, All Channels..., Complete or Selected Channel...).

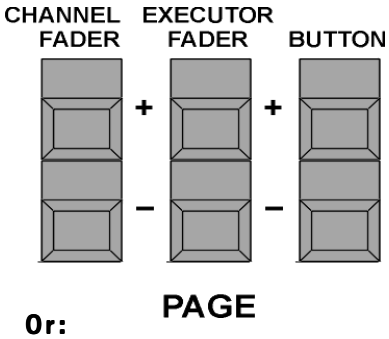
DELETE: Will remove all values.

CUE ONLY: Will copy the values of the previous step into the following step (that step must be empty).

BLOCK: With BLOCK, the removed values (light gray) can be converted into "saved values". The values will be displayed in pink.

UNBLOCK: Re-converts block values to removed values (light gray).

5.5 Page Administration



If you are in Channel Mode, the currently called-up PAGE of the CHANNEL Mode appears down in the middle. ➡ **3.5.1** CHANNEL Mode.

If you are in Executor Mode, the currently called-up PAGE of the executor faders appears down in the middle.

After pressing the LIST button once, the currently called-up PAGE of the EXECUTOR BUTTONS appears at the bottom of the right display.

Using the respective PAGE buttons, you can open the different PAGES.

Or:

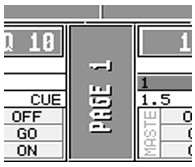
Hold a PAGE button down, for which another is to be called up. While holding down a button, the EXECUTOR Button LEDs will indicate the current PAGE you are on (Example: If LED 28 is flashing, PAGE 8 is selected). By pressing another button you can switch to a different PAGE.

Or:

5.5.1 Channel Page

When pressing both PAGE buttons of the Channel Mode simultaneously the display will show a summary of the CHANNEL PAGES.

Or:

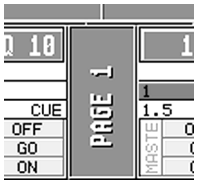


If in Channel Mode, you can call up the summary for all Channel Pages by pressing the PAGE Buttons in the display. By clicking on the respective PAGE Buttons you can call up the PAGE.

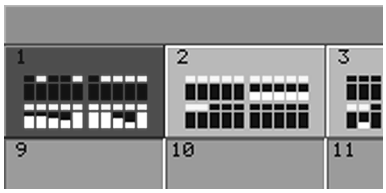
5.5.2 Executor Fader Page

When pressing both PAGE buttons for the Executor Faders simultaneously the display will show a summary of the Executor Fader Pages.

Or:



If in EXECUTOR FADER Mode, you can call up the summary for all EXECUTOR FADER Pages by pressing the PAGE Buttons in the display. By clicking on a PAGE Button you can call up the respective PAGE.

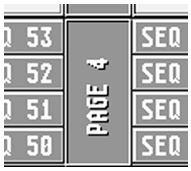


The individual Faders are indicated by symbols in the respective PAGE Buttons. The yellow bar graph will give you the currently set value for the respective Fader. If there is a green square above the Fader symbol, a Sequence, a Group or a Special Master is allocated to this Executor Fader. If this square is yellow, the Sequence or Chaser is active.

5.5.3 Executor Button Page

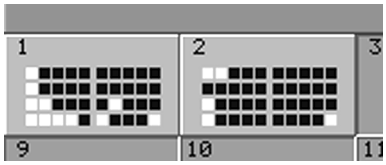
When pressing both PAGE buttons for the Executor Buttons simultaneously the display will show a summary of the EXECUTOR BUTTON Pages.

Or:



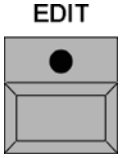
After pressing the LIST button once, the TFT display will show a listing of the Sequences assigned to the Buttons, and in the middle a PAGE Button with the currently called-up EXECUTOR Page.

You can call up the summary for all EXECUTOR BUTTON Pages by pressing the PAGE buttons in the display. By clicking on a PAGE button you can call up the respective PAGE.

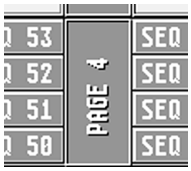


The buttons are indicated by symbols in the respective PAGE buttons. If there is a green square, a Sequence, a Group or a Special Master is allocated to this Executor Button. If this square is yellow, the Sequence or Chaser is active.

5.5.4 Edit PAGE Name



Press the EDIT button once.



Select the PAGE button on the display.

The EDIT NAME window will open. Enter a name using the keyboard and confirm with ENTER.

5.5.5 Copying, moving and deleting Pages

Copy or move the Page containing the Executor faders *or* buttons

Press the COPY button once to copy Pages (LED is on).

Or:

Press the MOVE button once to move Pages (LED is on).
Press the PAGE button once (LED is on).
„**2**" for Executor fader or „**3**" for Executor buttons (enter via numeric keypad).
Press the „**.**"-(dot) key and then enter the page number.
Press the AT key (LED is on), enter the number of the target Page and confirm with ENTER.

Copy or move complete Pages with Executor-Faders *and* buttons

Press the COPY button once to copy Pages (LED is on).

Or:

Press the MOVE button once to move Pages (LED is on).
Press the PAGE button once (LED is on).
Enter the page number.
Press the AT key (LED is on), enter the number of the target Page and confirm with ENTER.

Delete Pages with Executor faders *or* buttons

Press the DELETE button once to delete Pages (LED is on).
Press the PAGE button once (LED is on).
„**2**" for Executor fader or „**3**" for Executor buttons (enter via numeric keypad).
Press the „**.**"-(dot) key and then the page number; confirm with ENTER.
A window will open; here, confirm the deleting operation with the DELETE button.

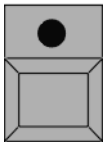
Deleting Pages with Executor fader *and* buttons

Press the DELETE button once to delete Pages (LED is on).
Press the PAGE button once (LED is on).
Enter the page number on the keypad and confirm with ENTER.
A window will open; here, confirm the deleting operation with the DELETE button.

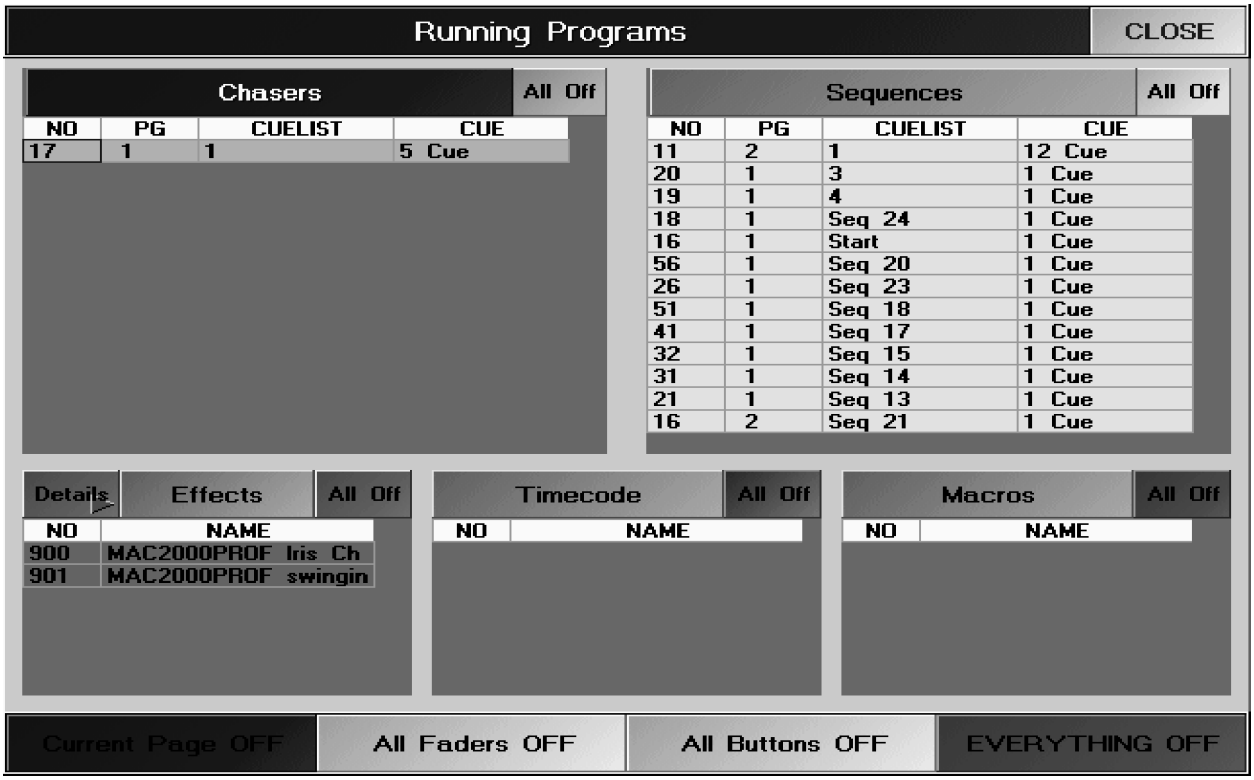
If there are programmed Macros or Timecode Shows, in which the moved or deleted Pages were to be used, these assignments may get lost!

5.6 OFF menu (RUNNING PROGRAMS)

OFF



Pressing the OFF button twice will open the RUNNING PROGRAMS window.



All active chasers, sequences, effect groups, timecode shows and Macros are displayed here.

- CHASES ALL OFF: Switches off **all** (!) active CHASERS.
- SEQUENCES ALL OFF: Switches off **all** (!) active SEQUENCES.
- EFFECTS ALL OFF: Switches off **all** (!) active EFFECTS.
- TIMECODE ALL OFF: Switches off **all** (!) active TIMECODE SHOWS.
- MACROS ALL OFF: Switches off **all** (!) active MACROS.

Pressing the DETAILS button will open the View ALL RUNNING EFFECTS menu. ➡ **6.6** View ALL RUNNING EFFECTS menu

- CURRENT PAGE OFF: Switches off **all** (!) Executors of the current Page
- ALL FADERS OFF: Switches off **all** (!) active EXECUTOR Faders.
- ALL BUTTONS OFF: Switches off **all** (!) active EXECUTOR buttons.
- EVERYTHING OFF: Switches off **all** (!) EXECUTORS.
- CLOSE: Will close this window.

You can also switch off Executors or Pages directly.

e.g.: – [OFF button] [EXECUTOR button] [3] [TIME button] [2] [Enter]

– [OFFbutton] [PAGE button] [3] [TIME button] [2] [Enter]

Furthermore, Fixtures or Groups can be released (kicked out) from direct access.

e.g.: – [OFF button] [FIXTURE button] [3] [Enter]

– [OFF button] [GROUP button] [3] [Enter]

6 Effects

6.1 Effect Pool

In the Effect Pool, you can save up to 900 different Effect Groups. In the individual Effect Groups, different Effects and functions can be combined and matched to each other.

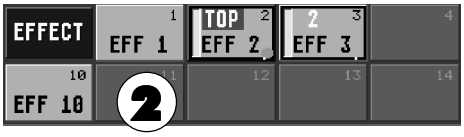
For PAN/TILT values, self-created two-dimensional forms can be called up and adjusted. ➡ **6.7** Creating and saving virtual forms

The individual Effect Groups can be subdivided into **four** different types:

- Effect Group **with** assigned Fixtures or Dimmers (button of the Effect Group is displayed in pink)
- Effect Group **without** assigned Fixtures or Dimmers (button of the Effect Group is displayed in red)
- Temporary Effect Group (buttons displayed in blue in the ALL RUNNING EFFECTS menu). If this Effect Group is not saved after having been created, it will automatically be deleted after switching off.
- Cuelist Effect Group (Effect Group button displayed in orange). A temporary effect will directly be saved in a Cue.

6.1.1 Creating an Effect Group

Create an EFFECT window. ➡ **3.1** Creating windows

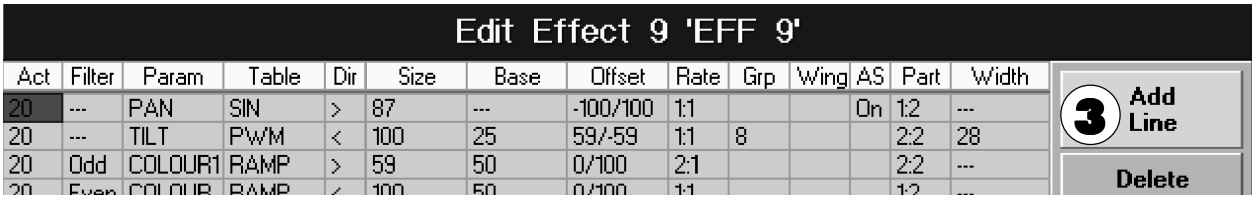


1 Select Fixtures or Dimmers, for which an effect is to be used (selected Fixtures/Dimmers are indicated by yellow characters).

2 Choose an Effect Group. Buttons and Encoder names are displayed above the encoders. Pressing the **EDIT button** for this Effect Group will open the EDIT EFFECT menu in the right TFT display.

Or:

Make a right mouse click on a button in the Effect Pool. The EDIT EFFECT menu will appear in the right TFT display.



3 Pressing the ADD LINE button once will open the SELECT PARAMETER window. Now, select a function (e.g. PAN). After selecting a function, the SELECT TABLE window will open, where you can select an Effect for the chosen function.

PWM:	Pulse width modulation
RANDOM:	Random fade-ins of individual channels of the selected function
CHASE:	Running light function
SIN:	Sinus function
COS:	Co-sinus function
LIN+:	Saw tooth ascending
LIN–:	Saw tooth descending
TRIANGLE:	Triangle function
PHASE1/PHASE2/PHASE3:	To create rainbow colors by means of the color mixing unit. Setting one of the PHASES on one channel of the color mixing unit will create a rainbow color-blending when executing the effect.

By pressing the USER DEFINED button (turns dark gray), self-created two-dimensional forms can be selected for the PAN/TILT function. If a form is to be created or modified, press the NEW or EDIT button to open the EDIT FORMS menu. ➡ **6.6** Creating and saving virtual forms

In order to assign further Effects to the selected Fixtures/Dimmers in this group, press the Add Line button again. A new line will be displayed and the Select Parameter window will open. Choose a function now and assign an Effect.

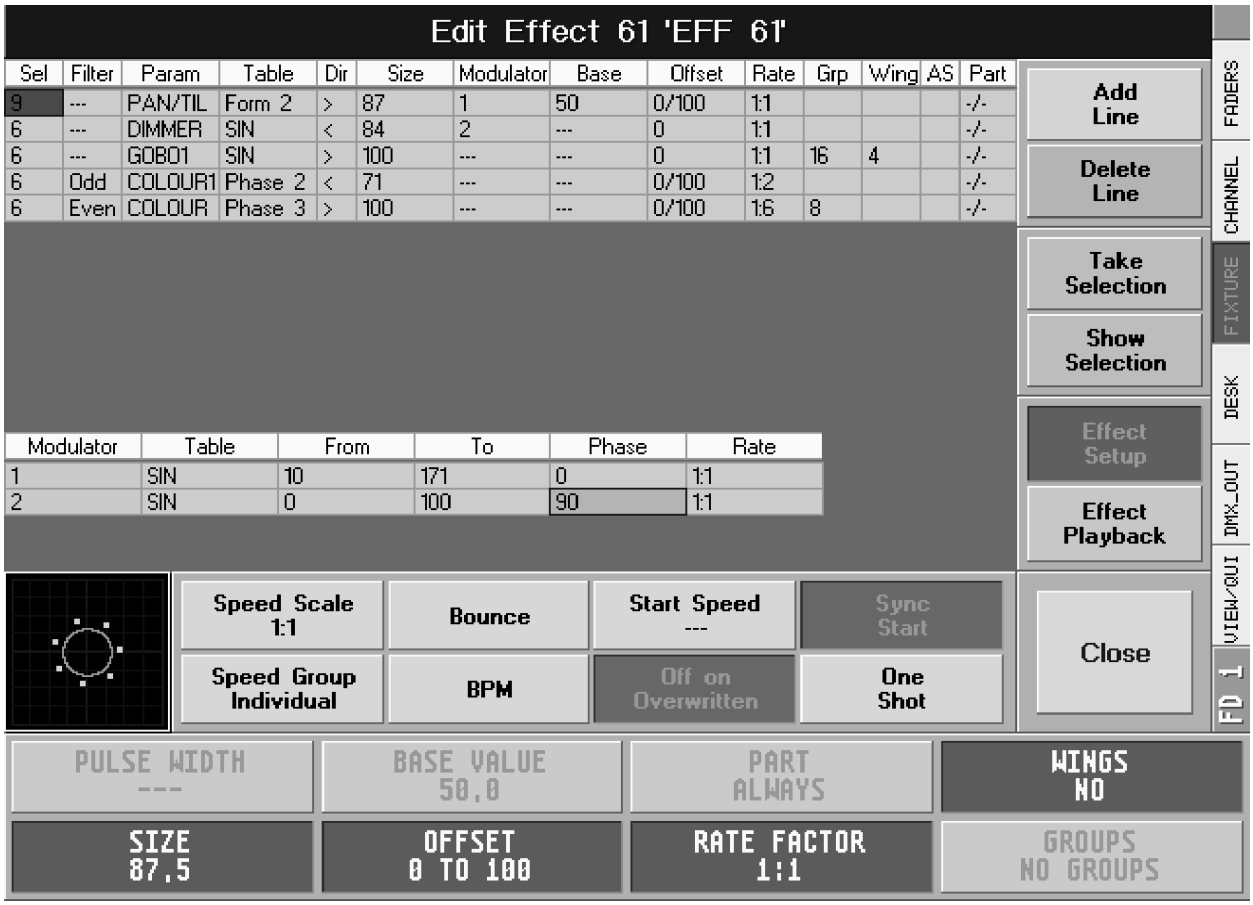
Up to 16 individual Effects can be combined within a Group.

6.2 Editing Effect Groups

When choosing an Effect Group from the Effect Pool, respective buttons will be displayed above the Encoders. Pressing the **EDIT button** for this Effect Group will open the EDIT EFFECT menu.

Or:

Make a right mouse click on a button in the Effect Pool. The EDIT EFFECT menu will appear in the right TFT display.



6.2.1 Editing Effects

In the title bar, the Effect Group to be modified will be displayed with its number and name. In the second line, the column functions are listed:

- Sel (Selection): Displays the number of Fixtures or Dimmers assigned to this Effect. If the Fixtures' or Dimmers' assignments are to be modified for an Effect, it has to be chosen first. If chosen, this will be indicated by a red background.

Pressing the SHOW SELECTION button once will select the assigned Fixtures and Dimmers (displayed in yellow).

Select those Fixtures and/or Dimmers (will be displayed in yellow) that are to be assigned to this Effect. Now, press the TAKE SELECTION button once. The new number of Fixtures and Dimmers will now be inserted and adopted. If an Effect Group without selection is to be created, do **not** select Fixtures and Dimmers, but press the TAKE SELECTION button once. The cell will now display a "Zero". The button of this Effect Group will be indicated in red in the Effect Pool.

- Filter: Here, a filter can be set that limits the execution of the Effect either to the odd-numbered or to the even-numbered Fixtures. To assign a filter, select the cell. Press the Encoder right of the display once. The SELECT FILTER window will open, where you can select a filter for this Effect.

- Param (Parameter): Display of the assigned function, for which the respective Effect has an influence. To re-assign a function, select the cell. Press the Encoder right of the display once. The SELECT PARAMETER window will open, where you can select a different function for this Effect.

- Table: Here, the assigned Effect is indicated with its name.

  To re-assign an Effect, select the cell. Press the Encoder right of the display once. The SELECT TABLE window will open, where you can select a different Effect for this function. The left part of the window displays the selected Effect. If the Effect Group has been started, the Fixtures and Dimmers will be displayed on the Form.

  PWM: Pulse width modulation. The pulse width can be defined as follows: Press the EFFECT SETUP button once (button has a dark background), press the PULSE WIDTH button once (button has a green background). Now, the pulse width can be modified using the Encoder below. The pulse width can be set to between 0 and 100%. Pressing the Encoder once shortly will automatically set the width to 25, 50, or 75%. You can also use the ALIGN function to set this value. ➡ **3.4.1** ALIGN function

  The values set for the respective Effects will be displayed in the WIDTH column. **Press and hold** the Encoder and turn to the right so that the focus (blue cell frame with red background) will be moved to the right. When moving the focus beyond the right border, further columns will be displayed (WIDTH, BASE).

  RANDOM: Random fade-ins of individual channels of the selected function. Die number of channels faded in can be set.

  SIN: Sinus function

  COS: Co-sinus function

  LIN+: Saw tooth ascending

  LIN–: Saw tooth descending

  TRIANGLE: Triangle function

  PHASE1/PHASE2/PHASE3: To create rainbow colors by means of the color mixing unit. Setting one of the PHASES on one channel of the color mxing unit will create a rainbow color-blending when executing the effect.

  By pressing the USER DEFINED button (turns dark gray), self-created two-dimensional forms can be selected for the PAN/TILT function. If a form is to be created or modified, press the NEW or EDIT button to open the EDIT FORMS menu. ➡ **6.6** Creating and saving virtual forms

  Pressing the SELECT button will adopt the function; the window will close discarding any modifications when pressing CANCEL.

- Dir (direction): In this column, an arrow indicates in which direction the Effect will be executed. To reverse the direction, select the cell. Press the Encoder right of the display once.

- Size: In this column, each Effect is displayed with a separate value. The set value increases or decreases the size of the selected function. The maximum limit for size modifications can be set from –200 to +200%.

  Before modifying the value of a size, select the Effect first. Press the SIZE button once (green background). Now, you can set a different size using the Encoder below. Pressing the Encoder once shortly will automatically set the size to 100. Pressing the Encoder a second time, the value will increase to 200, and at the third time, it will be reset to "0". You can also use the ALIGN function to set this value. ➡ **3.4.1** ALIGN function

- Modulator: In this column, you can assign an individual Modulator to each individual Size effect. Using a Modulator, the effect size can automatically be altered.

  To assign a Modulator for this effect, select this cell and shortly press the Encoder on the right side of the Display. The SELECT MODULATOR window will open, where you can now go to NEW MODULTOR by turning the Encoder and shortly pressing it to select this option. A new modulator will now be generated in the lower part of the sheet.

  - Modulator: In this column, the modulators will be discerned by respective numbers.
  - Table: Here, the assigned effect for the modulator will be displayed by its name (Assignment ➡ item **Table**, previous page).
  - From: Here, the starting point for the automatic modification is set.
  - To: Here, the end point for the automatic modification is set.
  - Phase: Here, an angle for moving individual modulators can be set.
  - Rate: Display of the set ratio between the speed for this individual Modulator as to that of the whole Effect Group (Assignment ➡ item **Rate**, below).

- Base: You can also set an average value for each Effect using the BASE VALUE option. The set value will overwrite all previously modified values of this function and by this, will control all Fixtures/Dimmers evenly. The value can be set to between 0 and 100%.

  Before modifying the BASE VALUE, select the Effect first. Press the BASE VALUE button once (green background). Now, you can set an average value using the Encoder below. Pressing the Encoder once shortly will automatically set the value to 50% (default value). Pressing the Encoder a second time, the value will be deleted and set to NONE (no BASE VALUE). If **no** BASE VALUE ist set, the Cue "behind" or a direct access will take effect. You can also use the ALIGN function to set this value. ➡ **3.4.1** ALIGN function

- Offset: Display of the set Offset for this Effect. By modifying the Offset, the starting points for the selected Fixtures and Dimmers will change. Default setting is between 0 and 100, i.e. the first Fixture/Dimmer starts with an offset of 0, the last with a maximum offset of 100%; all Fixtures/Dimmers in between will be distributed evenly. The maximum limit for Offset modifications can be set from -100 to +100.

  Before modifying the value of a size, select the Effect first. Press the OFFSET button once (green background). Now, you can set a different Offset using the Encoder below. Pressing the Encoder once shortly will automatically set the value to 0. You can also use the ALIGN function to set this value. ➡ **3.4.1** ALIGN function

- Rate: Display of the set ratio between the speed for this individual Effect as to that of the whole Effect Group. Possible settings range between 1:16 and 4:1. At a ratio of 16:1, the rate set for the Effect Group will be divided by 16. If the setting is 4:1, the rate will be multiplied by four.

  Before modifying the ratio's value, select the Effect first. Press the RATE FACTOR button once (green background). Now, you can set a different ratio using the Encoder below. Pressing the Encoder once shortly will automatically set the value to 1:1.

- Grp (Group): Display of the set number, by which the assigned Fixtures or Dimmers will be divided. In the subdivided groups, the Effect will then fully be executed.

  Before modifying the subdivision value, select the Effect first. Press the GROUPS button once (green background). Now, the subdivision of the Effect can be set using the Encoder below. Pressing the Encoder once shortly will automatically delete the set value.

- Wing: The set number will indicate, how often the assigned Fixtures or Dimmers and the Effect will be mirrored. Possible settings range between –8 and +8.

Example: With a setting of 2, the assigned Fixtures/Dimmers will be divided in the middle. The set effect will now be executed in the first half forwards up to the middle, and in the second half, the Effect will be executed in reverse from the middle onto the last Fixture/Dimmer.

With a setting of -2, the assigned Fixtures/Dimmers will be divided in the middle. The set effect will now be executed in the first half forwards up to the middle, and in the second half, the Effect will be executed in reverse and phase-shifted by 180° from the middle onto the last Fixture/Dimmer.

Before modifying the wing value, select the Effect first. Press the WINGS button once (green background). Now, the number of Effect wings can be set using the Encoder below. Pressing the Encoder once shortly will automatically delete the set value.

- AS (Adaptive Speed): If this function is activated, the speed will automatically be adjusted when the number of Fixtures or Dimmers changes. That means, the individual Effects of this Effect Group do **not** run at different speeds when working with different numbers of Fixtures or Dimmers, but always at the same step speed.

  To activate the function, select the cell. Press the Encoder right of the display once.

  Or:

  Activate by making a short right mouse click into the cell below AS. This will be indicated by a YES in this cell.

- Part (Partly): Display of the set sequential division of the respective Effect as to the whole Effect Group. The sequence of an Effect can be subdivided 16 times, and an Effect can then be assigned to **one individual** subdivision.

  Example: With a setting of 1:2, the individual Effect would always be executed in the first half of a Effect Group sequence. Before modifying the subdivision value, select the Effect first. Press the PART button once (green background). Now, you can set the subdivision of the Effect Group for the individual Effect by **pressing and holding** the Encoder below. After a subdivision is set, and when the Encoder is pressed, you **cannot** designate a section in which a particular Effect is to be executed.

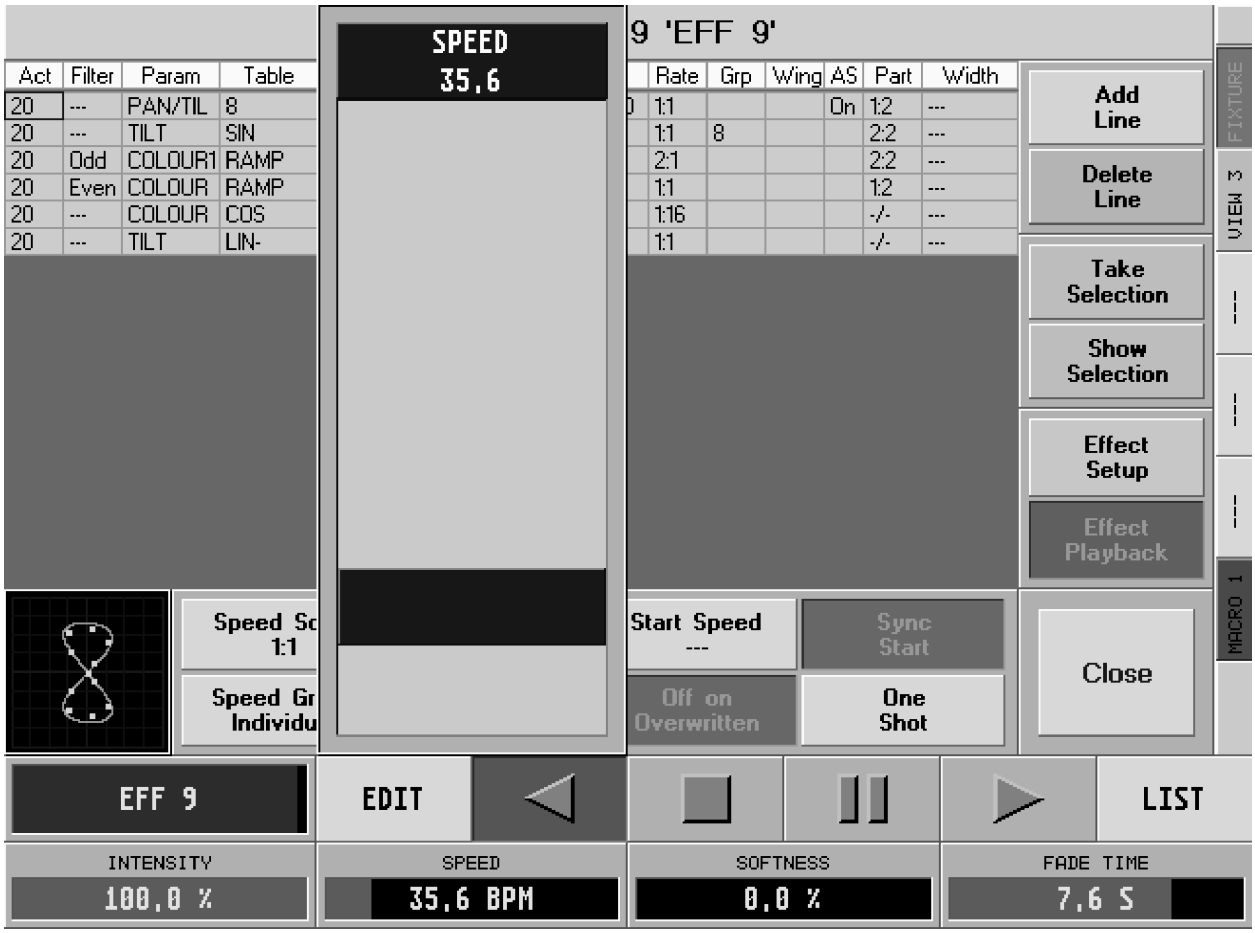
  Pressing the Encoder once shortly will set the value to ALWAYS and the Effect will be executed during the whole period.

6.2.2 Deleting individual Effects

Select the Effect to be deleted.

Press the DELETE LINE button.

6.3 Executing an Effect Group



Select the Effect Group from the Effect Pool. The Effect Group will be started automatically.

Or:

The names and playback buttons for the Effect Groups will be displayed in the right TFT display above the Encoders. The name of the currently selected Effect Group will appear above the left Encoder.

- Pressing the right arrow will start the complete Effect. The selected Fixtures or Dimmers will now form the Effect.
- Pressing the PAUSE button will stop or restart the complete Effect, respectively.
- You can switch off the Effect using the STOP button.
- By pressing the left arrow, the Effect will run backwards.

With the left INTENSITY Encoder, you can globally adjust the size of the whole Effect Group.

Pressing the Encoder while turning it will increase or decrease the Encoder's resolution, depending on the setup. When pressing an Encoder or the button above, this will bring up a Fader above the Encoder in the display. Now, you can also use it to modify the value.

Use the SPEED encoder to set the speed for the whole Effect Group.

If you use the Encoder to increase the SOFTNESS value, the Effect will be faded in and out more softly. SOFTNESS can be used for PWM-, RANDOM- and CHASE Effects.

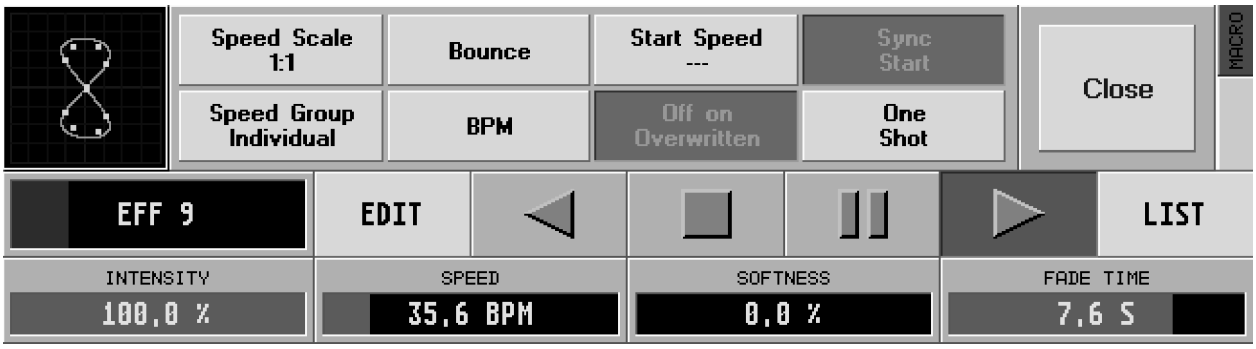
Using the right FADE TIME Encoder, you can now globally set a fade in and fade out time for this Effect Group. When switching the Effect Group on or off, this Fade Time will be faded in or out with the set duration.

Pressing the EDIT button will call up the Edit menu for this effect. ➡ **6.2** Editing Effects

Pressing the LIST button will open the VIEW ALL RUNNING EFFECTS window, where you have an overview on all currently active Effect Groups. ➡ **6.6** View ALL RUNNING EFFECTS menu

6.4 Customizing an Effect Group

The global settings like e.g. Bounce, BPM, Intensity, Speed etc., are automatically saved to the Effect Group.



You can customize the individual sequences of the Effect Groups by using the respective buttons.

Speed Scale: The current ratio of the SPEED setting will be displayed on the button. Pressing this button will open the SPEED SCALE menu. Pressing a button will re-adjust the Speed setting. With MUL BY 2 or MUL BY 4, the SPEED setting will by multiplied by 2 or 4, with DIV BY 2, 4 or 8, the SPEED setting will be divided by 2, 4 or 8. Pressing the 1:1 button will recall the default setting again.

Speed Group: The button will display the currently assigned SPEED group. Pressing this button will open the SPEED GROUP menu. By pressing a button, you can designate a SPEED Group. Using the Fader of the assigned SPEED Group, you can now adjust the speed for this Effect Group. ➡ **5.1.10** Assigning Special Masters

If INDIVIDUAL is selected (default setting), you can adjust the speed only by using the SPEED encoder.

Bounce: If this button is pressed (dark background), the whole Effect Group will first run forwards and then backwards, etc.

BPM: If this button is pressed (dark background), the speed of the whole Effect Group will be controlled by the automatic measure recognition. ➡ **2.14** Setting Sound signals

Start Speed: Pressing this button once will save the currently set speed. The button will display the saved speed. From now on, this Effect Group will be started with this speed, even if the speed was changed during the execution. To delete the saved speed, use the Encoder to set the SPEED to STOP and press the START SPEED button once. Now, no speed is saved and the button will display NONE.

Off On Overwritten: This Effect Group will be switched off, when the OFF ON OVERWRITTEN button is pressed (dark background) and another Effect Group is started, in which the same Fixtures/Dimmers are to be used (default setting).

If this function is disabled, the Effect Group will **not** be switched off. It is still active, but does not trigger any Fixture/Dimmer. The button of this Effect Group in the Effect Pool will display a white/red flashing "2". The number indicates, at what position this Group will be in relation to the other overwritten Effect Groups. If the **other** Effect Group that had overwritten this Group, is switched off, this Effect Group will again trigger the Fixtures/Dimmers. This function is active by default when creating a new Effect Group.

Sync Start: If this button is pressed (dark background), and another Effect Group had already been started, **this** Group will automatically be started at the same speed and position.

One Shot: If this button is pressed (dark background), the Effect Group will only be executed for one run and deactivated afterwards.

6.5 Effect Groups in Cues

Effect Group calls can be saved in Cues, too.

In the Cues, the settings for call (GO, GO-, Pause and OFF), Intensity, SPEED, SOFTNESS and IN/OUT FADE TIME are saved. No further settings from the Effect Group will be saved in the cues (function as with presets).

Or:

It is also possible to create Cues, to which an own Effect Group can be assigned. If temporary Effect Groups are used when creating the Cues, a copy of the Cue will also be saved, i.e. it will not depend on the original Effect Group anymore.

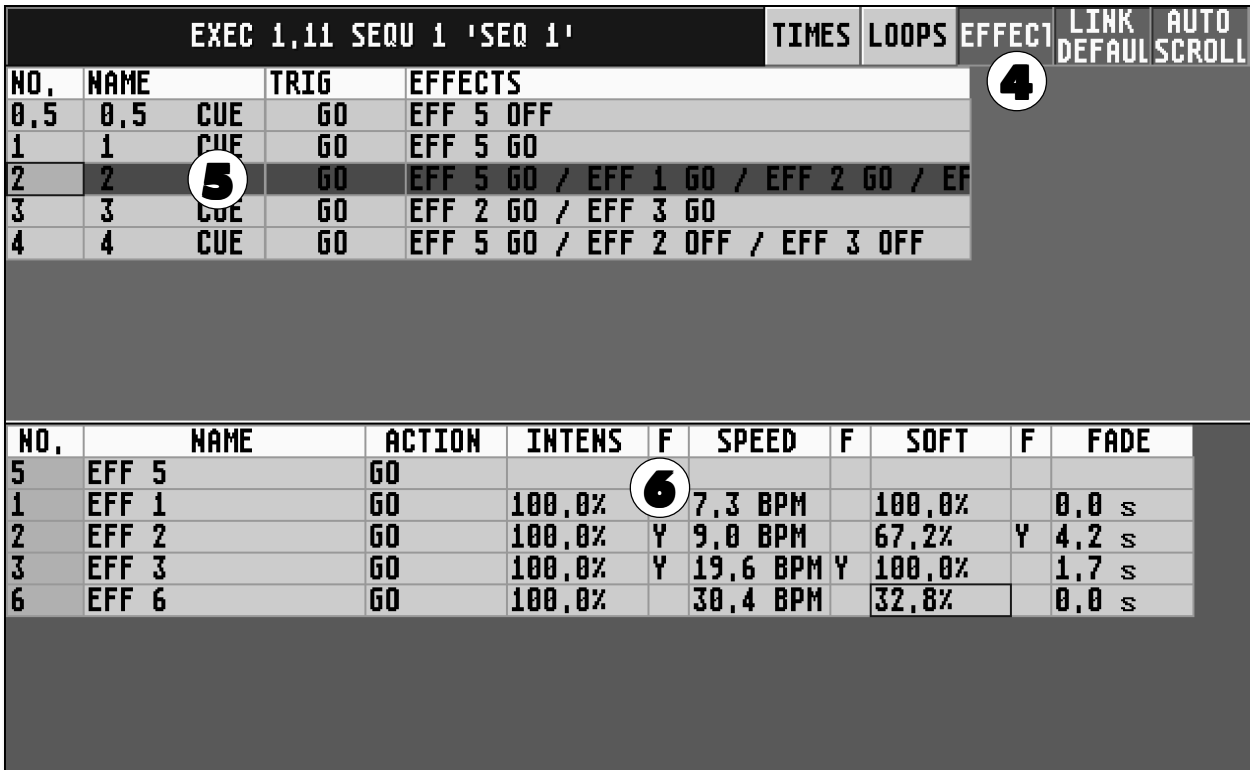
1 Start an Effect Group in the Effect Pool by selecting it.

2 Press the STORE button once.

3 Press the EXECUTOR button to which the call is to be saved. The Effect Group call will be saved in the Cue with all settings mentioned above. If this Cue is called up, the Effect Group will be started.

When calling up Effect Groups, its size, speed and softness can be faded in or out.

If in the Effect Group a FADE TIME is set, the intensity and speed or softness of the Effect Group will automatically be faded in or out when this Group is started.


EXEC 1.11 SEQU 1 'SEQ 1'
TIMES
LOOPS
EFFECT
LINK DEFAUL
AUTO SCROLL
4
5
6
NO. NAME TRIG EFFECTS
0.5 0.5 CUE GO EFF 5 OFF
1 1 CUE GO EFF 5 GO
2 2 CUE GO EFF 5 GO / EFF 1 GO / EFF 2 GO / EF
3 3 CUE GO EFF 2 GO / EFF 3 GO
4 4 CUE GO EFF 5 GO / EFF 2 OFF / EFF 3 OFF
NO. NAME ACTION INTENS F SPEED F SOFT F FADE
5 EFF 5 GO
1 EFF 1 GO 100.0% 7.3 BPM 100.0% 0.0 s
2 EFF 2 GO 100.0% Y 9.0 BPM 67.2% Y 4.2 s
3 EFF 3 GO 100.0% Y 19.6 BPM Y 100.0% 1.7 s
6 EFF 6 GO 100.0% 30.4 BPM 32.8% 0.0 s

4 In the Executor Sheet or in Edit Sequence, press the EFFECT button (will be displayed dark gray). The window will be divided into two halves. The upper part will display the Cue, the lower part the calls of the individual Effect Groups for the selected Cue, including the respective parameters.

5 Select a Cue in which calls or parameters of Effect Groups are to be modified (selected Cue will be displayed with a blue frame and a magenta background).

6 The lower chart displays all calls of Effect Groups from this Cue.

Select an individual call to be modified (will be displayed with a blue frame). In the right display, the setting will be adopted and displayed above the Encoders and can be customized at will. If intensity, speed or softness are to be faded in or out with the set Fade Time when the Effect Group is called up, make one right mouse click into the cells behind the value in column F (Fade). The column will show a Y for YES. Press UPDATE to confirm the modifications and save them in the Cue.

You can modify the cell's Name, Intens, Speed, F, Soft and Fade directly by a right mouse click.

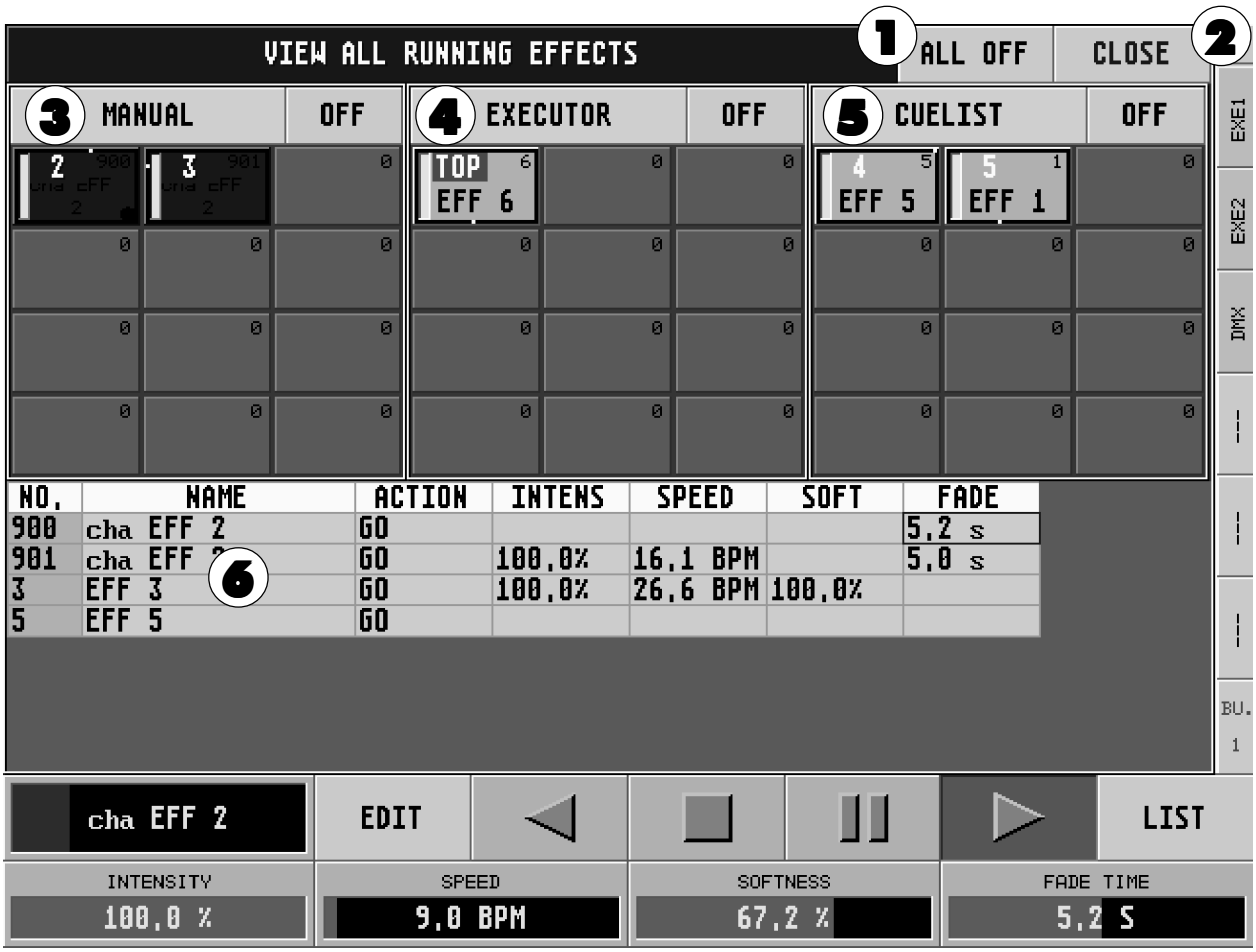
6.6 View ALL RUNNING EFFECTS menu

In this menu, all currently active Effect Groups will be displayed.

Press the EFFECT button twice. (On older consoles, this button is not labeled and is positioned between the VIEW and GOTO buttons. An appropriate label can be ordered from MA.)

Or:

When choosing an Effect Group from the Effect Pool, respective buttons will be displayed above the Encoders. Press the LIST button.



1 By pressing the ALL OFF button, you can switch off all Effect Groups simultaneously.

2 You can leave the menu with the CLOSE button.

3 In the left part of the menu, all manually called-up Effect Groups will be displayed. Pressing the OFF button on the right side of MANUAL, all these Effect Groups will be switched off.

4 The middle part of the menu shows all Effect Groups that were called up via EXECUTOR faders. Pressing the OFF button right of the EXECUTOR will switch off these Effect Groups. ➠ **5.1.1** Assigning Effect Groups to EXECUTOR faders

5 The left part of the menu shows all Effect Groups that were called up by Cues. Pressing the OFF button on the right side of CUELIST, all these Effect Groups will be switched off.

6 The lower part of the menu shows all Effect Group calls performed since last saving a Cue, including their respective parameters. When saving the next Cue, all calls in this Sheet will also be saved.

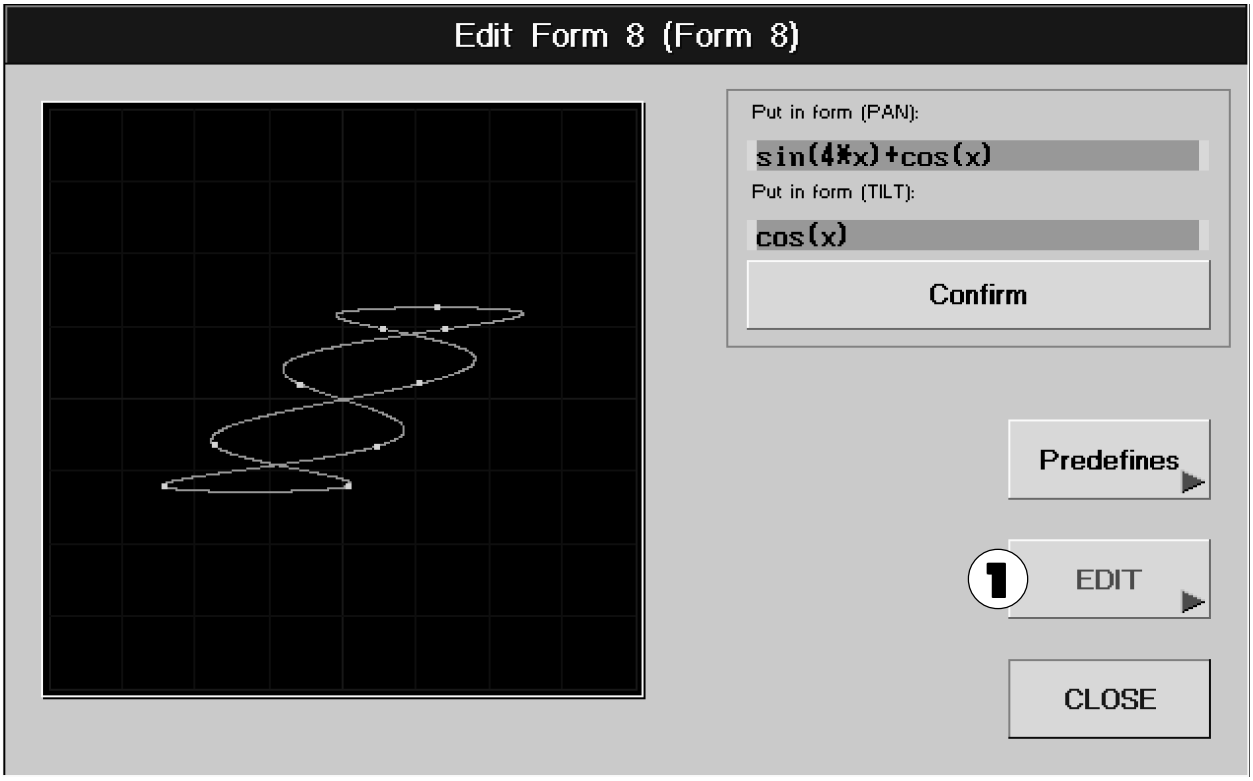
It is also possible to modify individual calls. To do so, select the respective call (will be displayed with a blue frame). The setting will be adopted, displayed above the Encoders and can be adjusted with them. You can delete a complete call by making a right mouse click into the NAME column. If you only want to delete a single parameter, make a right mouse click on the parameter.

6.7 Creating and Saving Virtual Forms (EDIT FORMS)

6.7.1 Creating Virtual Forms

From this menu, you can create two-dimensional forms for the PAN/TILT function. When creating Forms, the movements can directly be given out to the Fixtures. This serves mainly for testing the created forms and movements. The created Forms will automatically be saved to the Form Pool.

Calling up this menu: ➠ **6.1.1** Creating an Effect Group, **item 3**
➠ **6.2.1** Editing Effects, **item Table**

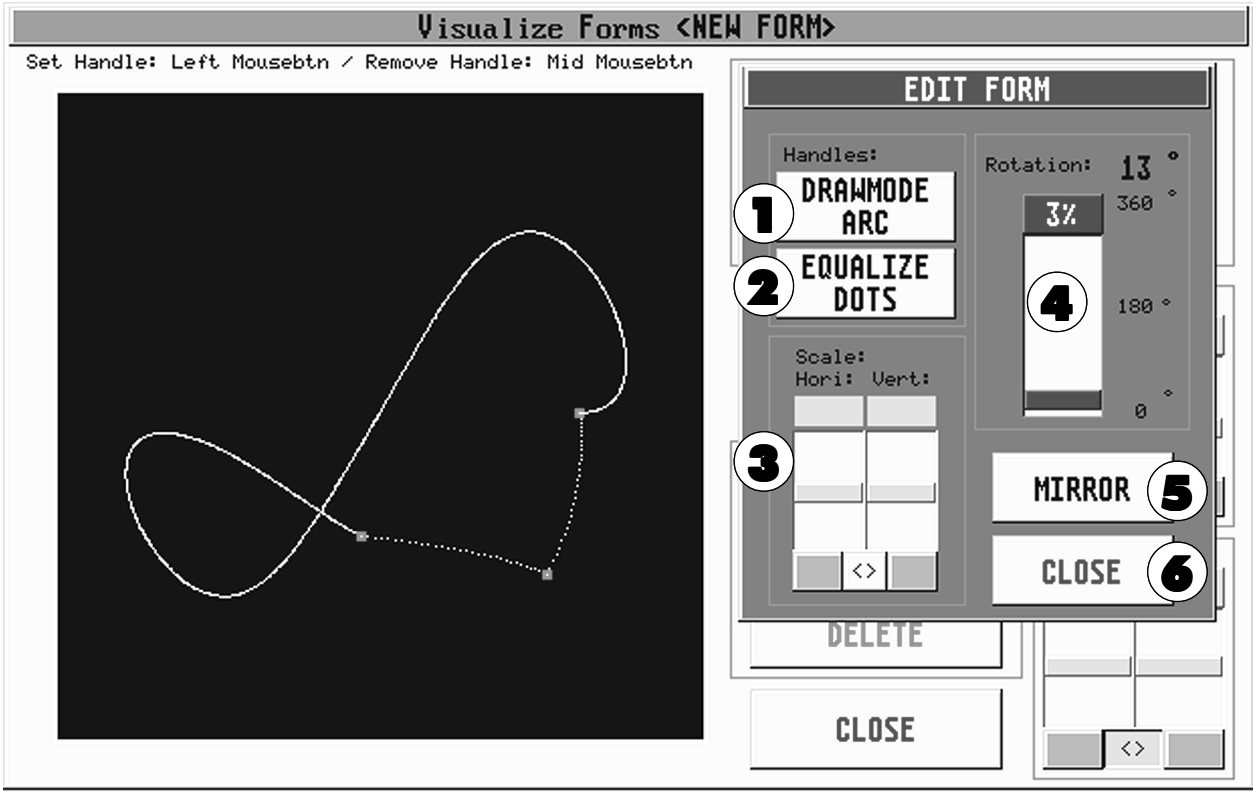


1 Press the PREDEFINES button once. A window will open, where several prepared Forms will be displayed. Select one of these Forms; this Form will now be drawn onto the black window.

6.7.2 Modifying Forms

EDIT

The EDIT FORMS window will open by pressing the EDIT button.



Make a left mouse click on various positions of the marked form. With each click on the form, a new red dot will be displayed on that position. In order to delete one of the dots, make a middle mouse click on this dot.

To reshape the form, make another left mouse click and **hold** the mouse button on one of the red dots. If you click the right mouse button during the reshaping (while holding the left mouse button), you can define the reshaping each time. ➡ item **1**

1 By pressing the button, you can program in which way the lines shall be drawn when reshaping the form:
ANGLE: straight line
ARC: outer arc
ARROW: inner arc

By reshaping the form, the lines will be expanded and, respectively, the extended positions of the form will be reported to the Fixture faster.

2 If the extended lines and, consequently, the longer ways for the Fixture are to be transmitted with the same speed, you have to press the EQUALIZE DOTS button once.

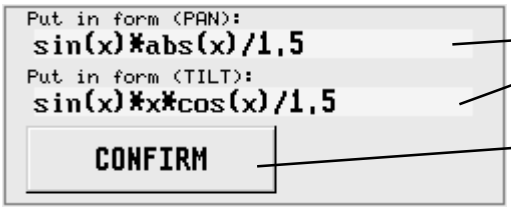
3 The form can be modified in its horizontal or vertical size using the Hori: and Vert: sliders. By pressing the dark-grey button below the modified sliders shortly, both values can be set simultaneously. By pressing the "< >" button, both sliders can be coupled, so that the size can be modified simultaneously.

4 Using the ROTATION slider, the form can be turned from 0° to 360°.

5 By pressing the MIRROR button, the form can be mirrored.

6 You can leave the EDIT menu with the CLOSE button.

With good knowledge in maths, you can also use formulas for PAN and TILT.



Make a left mouse click on the respective fields – now enter the formula via keyboard.

The form will be confirmed by pressing CONFIRM.

Syntax to enter a formula manually:

The standard display of mathematic formulas will be executed. The following is allowed:

- Mathematic Basic Operators: +, –, *, /
- Numerical constants: integers, floatingpoint numbers or exponential figures
  Example for valid numerical constants: 2.71818
  1.2e – 2
  0,4
- Other constants: pi corresponds to the circle figure p
- Variables: x
- Mathematical functions:
  - sin(x) or sinus(x)
  - cos(x) or cosinus(x)
  - abs(x) corresponds to the absolute amount
  - sqrt(x) corresponds to the square root
  - pow(x; y) corresponds to the y Power of x

  Arguments errors with x = 0 und y < = 0 or with x < 0 and y are no integers

Examples:

```
sin(3 * x)
sqrt(abs(x)) * sin(x)
sin(x) * cos(3 * x) * pi/2
(cos(x) * abs(x) + 1) / pow(x;2)
(cos(0.5 * x) * abs(x) + 0.5) / 2
```

7 Remote Control

7.1 Timecode

All programs of the *grandMA* can be synchronized by the LTC Timecode or MTC (Midi Timecode, Quader Frame, MTC Full Frame are not supported).

Timecode synchronization can be used to call up programs of one or more controllers to synchronize with a given audio or video recording. SMPTE 24-, 25- and 30 Drop and Non-Drop Frames are encoded time information, e.g. to be recorded on a separate track of a multitrack tape (frequency range of 1–2 kHz). Normally, this Timecode is already added when compiling the music, e.g. for presentations, but it can also be recorded afterwards making use of a regular recording studio. If the music is to be recorded in stereo, at least a third track is needed for the Timecode.

All programs of the *grandMA* can be synchronized by the LTC Timecode.

During the playback of the tape, the Timecode information is being transmitted to the connected controllers. Each controller has an internal memory that triggers the activation of a specific program at a given point of time. On the *grandMA*, the EXTERNAL LTC Timecode can be connected via a jack socket and the MTC via Midi IN on the backside of the unit.

7.1.1 Introduction to the New Timecode

The old timecode (up to version 2.20) had some disadvantages:

- Timecode was not controllable with the command line.
- Recorded GOs were relative and not referring to absolute cue numbers.
- Only the movement of the master-fader was recordable.
- Loading and selecting of timecode shows was a bit difficult.
- The way how timecode shows stayed in memory, and how they were linked to timecode windows was not easy to understand.
- The graphical representation was powerful and easy to look at, but for the inexperienced user not so easy to work with.

These points and others lead to the total reorganisation of dealing with timecode shows.

The good news first: **You will not loose any old timecode shows**. The new system will automatically convert all your old shows into the new format.

Here the major advantages of the new Timecode Show:

- Timecode shows are organised in a pool. So the basic handling of timecode shows like edit, copy, delete, etc. is totally compliant with the rest of the desk.
- Timecode shows are completely embedded into the command line. It is no problem now to start timecode show number 5 from a macro.
- GOTO commands are supported (and used as default when recording normal GOs), referring to absolute cue numbers.
- Cue names and numbers are displayed in the timecode show.
- All kinds of executor fader movements are recordable. So you can now record the change of a chaser speed or a crossfade.
- Automatic fader data reduction, reducing the amount of recorded fader movements dramatically and allowing easier manual editing afterwards.
- Free choice of editing in graphic or text mode. Text mode is supporting filtering for watching only wanted executors.
- Blind programming.
- No restrictions to the amount of timecode shows running at one time (memory of course).
- No restrictions for "no mouse please, users". The timecode show can be fully edited with encoders and/or touchscreen.
- Timecode shows can be "write-protected". So if you only want to watch your show running, you will not accidentally change something.
- Copy / Paste function even between shows possible. Timecode shows can be merged together.
- Autostart feature for timecode show, e.g. the show will automatically load and run upon detection of the correct SMPTE signal.
- Repeat function with definable number of repeats for timecode shows with internal synchronisation.

7.1.2 Creating a Timecode Show

The graphical way with touchscreen/mouse:

- Open a timecode pool window.
- Touch one of the timecode show buttons, you will get the timecode control bar for this show in the display on the right.
- Enter the name for the timecode show using the PC keyboard.
- Press the EDIT field in the timecode control bar, and the timecode editor will appear.

The command line way:

- EDIT TIMECODE X ENTER . Brings up the timecode editor and the timecode control bar for timecode show X. There is no hardware key for TIMECODE on the grandMA, but you can enter this in the command line or into a macro.

The mixed way:

- EDIT and then touch a button in the timecode pool.

If the timecode show that you have chosen was empty, there is only the naked editor in front of you, and you should now start recording or manual editing.

7.1.3 Playing back a Timecode Show

The graphical way with touchscreen/mouse:

- Brings up a timecode control bar for the desired timecode show when touching a button in the timecode pool.
- Use the cells with the cd player-like symbols to control the show playback.

The command line way:

- COMMAND TIMECODE X ENTER. COMMAND is one of the executor commands that you will find above the page buttons. You can use GO+ , PAUSE, <<< , >>> , ON and OFF.

The mixed way:

- COMMAND (as described above) and then touch a button in the timecode pool.

Description of playback commands:

Status	Command Line	Description
STOP	OFF	Show is stopped, no output is generated.
PAUSE	PAUSE	Show is stopped, output is generated for current time.
PLAY	GO+	Show is running.
RECORD	STORE	Show is recording.
JUMP BACK	<<<	Show jumps to the next breakpoint before current time.
JUMP FORWARD	>>>	Show jumps to the next breakpoint after the current time.

If a show is generating output, the corresponding button in the timecode pool will show the current time. In case of recording, this button is also blinking red with the note "REC".

External / Internal Sync

PLAY and RECORD depend in their behaviour on the sync setting (in the options menu).

If sync is set to internal, time will be running continuously, based on the internal time base.

If sync is set to "SMPTE", the current time of the timecode show depends on the SMPTE input signal. If MIDI is set, MTC (Midi Timecode) will be used.

In the headline of the timecode pool you find a SMPTE input indicator. Regardless of shows using SMPTE, it will always display the current SMPTE input signal together with the SMPTE frame format.

If a show is using SMPTE (external synchronisation), the local time within the show can differ from the external SMPTE time. By using the timecode offset in the options menu, you can set up a time offset, which is subtracted from the external SMPTE time.

Shows which are using internal sync can have a user definable repeat. These settings are also found in the options menu.

Pre Roll & After Roll, Dropout Elimination

Due to the fact that SMPTE is an analogue signal, fluctuations can occur. Very often there are temporary errors in the recorded SMPTE signal which are called dropouts.

As such misleading small errors should of course not affect the board, it filters out these errors automatically. Therefore the desk is filtering out these errors.

This filter is controlled by two values: **PRE ROLL** and **AFTER ROLL**.

PRE ROLL defines the time that a signal must be continuously good, before it is accepted by the console.

A small pre roll means that your console is reacting faster to incoming SMPTE signals.

AFTER ROLL is defining the time that a signal must be continuously bad or missing, before it is really assumed to be off. During the after roll time, the console continues the show, using its internal time base.

A small after roll means that your console stops faster after a missing SMPTE signal, but it also reacts faster to errors in the SMPTE signal.

The settings for pre roll and after roll can be found in the **context menu of the timecode pool**.

The names for pre roll and after roll have a historical reason. At the beginning of the timecode era , the huge tapes in the machines which contained timecode and audio signals where really visibly rolling .

Manually Changing Current Time

If the show is playing back or recording with external sync, it is not possible to change the time manually.

There are many different ways to change the current time of your show:

With the mouse in graphic mode:

- left mouse click somewhere into the timeline

With the encoder:

- Turn the time encoder (leftmost) to change the current time. Each click on the encoder means one frame.
- If you press and turn this encoder simultaneously, each click means one second.
- If you press the encoder without turning, you can enter an absolute time.

With the "jump to breakpoint" commands:

- You will find them as the outer playback symbols in the timecode control bar and as command line functions <<< and >>>.
- Time will jump to the next available breakpoint in the given direction.

With the event encoder (second) in the bar:

- Whenever you select a new event , time is jumping to the exact time of that event.

7.1.4 Recording a Timecode Show

Recording is only possible, if the timecode show is not write-protected (options menu).

Recording does always mean „live on stage". It can be done in three ways:

a) Fully automatic recording with external synchronisation. The current time is given by the SMPTE signal and every executor command or fader movement will be added to the timecode show until you stop or pause the show. Your actions and things already in the show are live on stage. All that you do and all show data run live on stage. You can repeat the recording step by step to add more and more details to your show.

b) Fully automatic recording with internal synchronisation. Basically the same as with external sync, time is running continuously, but you define yourself where to start and where to stop.

c) Half automatic manual recording. In this mode time is not running, although your show is in recording mode. Between each executor command that you want to be recorded, you can set the recording time manually with an encoder or by direct absolute input (simply press the first encoder). This is probably the best way of editing for the experienced user, who already has a time table in front of him. Even fader commands can be recorded this way.

Starting to record:

- **Automatic recording** is started by pressing the record symbol in the timecode control bar (the red symbol). It then depends on the sync-setting (in options menu), whether you will record with internal or external synchronisation. It can also be started using the command line, similar to recording a macro: STORE TIMECODE X ENTER or STORE and press a button in the timecode pool.
- **Manual recording** is started by pressing the MANUAL RECORD button in the timecode editor.

Stop recording:

- Recording is stopped when you PAUSE or STOP the timecode show.
- Automatic recording with internal sync is also interrupted if you enter a new time.
- Recording is NOT stopped when you close the timecode editor. So pay attention to what is being recorded, otherwise you will find a huge timecode show the other day ...

After recording, especially if you have recorded fader movements, it is always a good idea to use the **DO FADER DATA REDUCTION** (in the options menu). This keeps your show slim. The fader data reduction process guarantees, that the compressed signal will not differ more than 1 frame in time and 1% in value from the original. Usually recorded fader events will be reduced to 20% or less of the original amount.

The Length of the Show

During recording, the length of the show is automatically extended if needed. This also happens if you manually add events after the current length (see manual editing).

The length of a show becomes very important if you plan to use it with internal sync and repeat. Also in combination with the "when reaching the end" setting (to be found in options menu), it is worth to make some considerations how long your show should be.

The length of the timecode show can be changed in the options menu.

7.1.5 Manual Editing of a Timecode Show

Editing is only enabled, if the timecode show is NOT write-protected (options menu).

Track Management

A timecode show consists of TRACKS:

A TRACK has a specific function. At the moment, only **EXECUTOR TRACKS** are implemented, but for the future, we could well think of implementing tracks for submasters, global speeds etc., too. This way, one track would always relate to one specific executor. It is not possible to have two tracks for the same executor.

A TRACK consists of **SUBTRACKS**:

A SUBTRACK has a specific function that relates to its "father track". For example, a subtrack for an executor track could have the crossfade function. One subtrack always relates to one specific function. It is not possible to have two subtracks for the same function.

Every executor track has at least one subtrack for executor commands. Subtracks for fader movements are added if needed.

A SUBTRACK contains **EVENTS**:

An EVENT contains a specific TIME and DATA. The DATA is interpreted according to the function of the assigned subtrack.

Adding Tracks

While recording, respective TRACKS are added automatically. But of course you can also add tracks manually:

- Press the TRACK FUNCTIONS button or make a right mouse click into the track display of the timecode show editor (on the left side, below the sort button).
- Select ADD NEW TRACK.
- Choose an executor from the list, or simply press a real executor button. You can even enter EXEC 17 ENTER in the command line. An executor track for this executor will be added to your timecode show (if it did not exist already).

Changing the Executor

Changing the executor of an already existing track is very similar to adding a new track:

- Choose the track that you want to change (with the track encoder or by touching it)
- Press the TRACK FUNCTIONS button.
- Select CHANGE EXECUTOR from the list. The rest is similar to adding a new track.

Adding Subtracks

If needed while recording, respective SUBTRACKS are added automatically. But of course you can also add subtracks manually. Subtracks can only be added to already existing tracks:

- Choose a track (with the track encoder in the bar or by touching it).
- Press the TRACK FUNCTIONS button or make a right mouse click on the TRACK.
- Select ADD NEW SUBTRACK.
- Choose the type of the new subtrack from the list.

Deleting Tracks or Subtracks

- Choose a track (with the track encoder in the bar or by touching it).
- Press the TRACK FUNCTIONS button or make a right mouse click on the TRACK.
- Select DELETE TRACK.
- If the track contains events, you will be asked for a confirmation, otherwise the track is deleted immediately.
- If you delete the first subtrack (like executor command track), the whole track with all its subtracks will be deleted.

Expanding / Collapsing Tracks

Tracks can be **EXPANDED** or **COLLAPSED**. An expanded track is showing all its subtracks, while a collapsed track is hiding all its subtracks beside the first one. For an executor track, the first subtrack is always the executor command subtrack.

This functionality is only affecting the display. "Hidden" subtracks are played back, too.

An expanded track is marked with a "+" in front of it, a collapsed track is showing a "-".

Click on this mark to change the expand/collapse status of the track.

The TRACK FUNCTIONS menu contains functions to expand/collapse all tracks simultaneously.

Selecting Tracks

Tracks can be SELECTED individually. A selected track is displayed darker.

Only selected tracks are shown in TEXT display mode. For some functions it is particularly important, whether a track is selected or not. But for normal operations in graphic display mode you do not really have to care about this.

Click on the track name cell (maybe you have to do this twice, because the first click is choosing it as the current track) or press the track encoder within the bar to change the selection status of a track.

The TRACK FUNCTIONS menu contains functions to select/deselect all tracks simultaneously. These functions are also available as direct "R" (Reset all tracks to unselected) and "S" (Set all tracks to selected) buttons.

At the moment, selecting tracks does not affect the playback functionality, it is only a display and edit function. For future versions, however, we plan to have that as a special playback mode, to enable playback output for selected tracks only.

Sorting Tracks

Maybe you have a lot of tracks in your show, but at the moment you are only interested in some of them. Select these tracks and press the SORT button. The selected tracks will be sorted and displayed at the very top of the track display.

If you have selected all (or none) tracks and press SORT, they are sorted in their natural order, e.g. the order in which they appear on the console.

The sorting of tracks is part of the show and is saved with the show. It is only a display function and not affecting the playback functionality.

Adding Events

With the mouse in graphic mode:

- Choose the ADD mouse tool. The cursor will show an arrow with a big "+".
- Click anywhere into a track. At this very position, a new event will appear.
- To edit this new event, make a right click on it.

With encoder and buttons:

- Set the current time with the time encoder (first one) to where you want to add the event.
- Use the track encoder (second one) to select the track on which you want to add the event.
- Press the ADD HERE! button.
- At the given position, a new event will appear, and you are directly going to edit the event.

When you are adding events on an executor command track, the timecode editor is trying to be smart. It is trying to figure out what would be the most likely command at the given place.

For example if you have an executor with a cuelist, containing 3 steps, and you simply add one event after the other, it is assuming:

GOTO STEP1 , GOTO STEP2 , GOTO STEP3 , OFF

Or if you are adding a new event after a FLASH UP ON command, it will of course offer the new event as FLASH UP OFF.

For chaser, the editor is never predicting GOTOs, instead it is using conventional Gos. The editor is also assuming, that you only want to switch the chase on, and then off again, regardless of how many steps the chase has.

Attention, mouse users:

Please be aware that if you have chosen the ADD mouse tool, this tool stays active. So wherever you click with the mouse – something will be added. If you switch on "always reset mouse tool" in the options menu, the risk of accidentally adding something is reduced.

Selecting Events

Events can be SELECTED individually. A selected event is displayed in red. All selected events together are called the selection. You can MOVE, DELETE or COPY this selection.

Selecting with the mouse in graphic mode:

- Choose the SELECT mouse tool. The cursor will show a selection frame.
- Left mouse click anywhere into a track, keep mouse button pressed, and drag a frame.
- Upon release of the mouse button, all events inside the frame are being selected.

Selection with the mouse in text mode:

- Left mouse click anywhere into the list, keep mouse button pressed, and drag vertically a frame.
- Upon release of the mouse button, all text lines (events) inside the frame are being selected.

With the CREATE SELECTION function:

- Press the CREATE SELECTION button, the CREATE SELECTION menu appears.
- Choose if you want to make a selection only on the current (green) track, or on all selected tracks.
- Choose one of the three commands:
- A) BEFORE TIME Events before the current time will be selected.
- B) ALL All events on given tracks will be selected
- C) AFTER TIME Events after the current time will be selected.

Selecting the Current Event

One event can be defined as the current event. In graphic mode, this event is blinking. In text mode, this text line (event) is yellow. Its position is shown in the timecode control bar.

You can select the current event one way or the other:

With the mouse in graphic mode:

- Choose the SELECT mouse tool.
- Make a selection that contains only one event, or try to exactly pick one event.

With the encoders in the bar:

- Select the track with the track encoder (second one).
- Select the event with the event encoder (third one).

With the XY-encoder in text mode:

- Simply scroll through the list.

Deleting Events

With the mouse in graphic mode:

- Select the DELETE mouse tool. The cursor will show an arrow with a big "-".
- Drag a frame or click exactly on an event. Events that you pick or which are inside the frame will be deleted.

With the DELETE SELECTION button:

- Make a selection or select the current event.
- Then press DELETE SELECTION. If more than one event is going to be deleted, you will be asked to confirm that.

Attention, mouse users:

Please be aware that if you have chosen the DELETE mouse tool, this tool stays active. So wherever you click with the mouse – it will be deleted. If you switch on "always reset mouse tool" in the options menu, the risk of accidentally deleting something is reduced.

Moving Events

Move with the mouse in graphic mode:

- Choose the MOVE mouse tool. The cursor will show a hand with a little arrow. The corner of the arrow is the "hot spot" of the cursor.
- Left click INSIDE the selection or exactly on an event, keep mouse button pressed.
- Pull mouse horizontally. The selection/current event will follow.

With encoder within the bar:

- Make a selection or select the current event.
- Turn the MOVE encoder (rightmost). For every click of the encoder, you will move the selection/current event by one frame.
- If you press and turn the encoder, every click moves one second.
- If you press it without turning, you can enter a new starting time for your selection/current event. This input can be a relative movement if you use signs ("-1.5" will move your selection 1.5 seconds backwards in time).

In text mode:

- Edit the Time column (by right click with the mouse or press the XY-encoder).
- The movement will be relative if you use signs, otherwise it is absolute.

Editing an Event

You can only edit an already existing event (see Adding Events).

Editing an event means to change its data. If you want to change its time, look for MOVING EVENTS.

With the mouse in graphic mode:

- Right click exactly on an event. Edit menus appear accordingly to the type of the event.

With the event encoder in the bar:

- Select current event with the track and event encoder.
- Then press the event encoder. Edit menus will appear.

In text mode:

- Scroll to the event that you are looking for.
- Edit the appropriate column by a right click or pressing on the XY encoder. The parameter column is only editable for GOTO commands and for fader events.

Special fast edit for fader-events in graphic mode:

- This method is not exact enough for speeds, but for master fader events it is the recommended way.
- Click with the middle mouse button exactly on an event and keep mouse button pressed.
- Pull mouse vertically with pressed middle mouse button. You can see how the value of the fader event is following.

7.1.6 Special Procedures

Recording Crossfades

Crossfades for executors are recorded as a combination of commands and fader movements.

These commands are:

XGoUp Crossfade will start upwards

XGoDn Crossfade will start downwards

Xend Crossfade has ended

XGoUp and XGoDn have a **cue number as parameter**, just like a GOTO command, therefore a crossfade may start on any cue, not only on the next one.

Try to record a crossfade and have a look at the outcome. You will see, that the **global crossfade setting** CROSSFADE PERMANENT / RELOAD is affecting the recording.

In the first case, a pattern of XGoUp, XgoDn, XGoUp... Xend is recorded, while in the second case only XGoUps are recorded.

Nevertheless you can change the global crossfade mode afterwards without affecting the playback of your recorded timecode show.

If you edit a crossfade manually, be aware that the crossfade **fader movement alone does not do anything**. Although faders are moving, no crossfade is started. You have to place the crossfade commands on the command track to make the crossfade work.

Accordingly, if you want to move a crossfade in time, you have to **move both**, the fader events on the fader track and the crossfade commands on the command track.

At first sight, this procedure of recording a crossfade may seem to be complicated, but it has a lot of advantages:

- The crossfade commands are displayed in text mode, making crossfades readable
- Crossfades are relating to absolute cue numbers, like gotos.
- Crossfades are not destroyed by fader data reduction
- You can jump into the middle of a crossfade, or run backwards into a crossfade, and it will be correctly initialised. (This will happen quite often when using external time code!)

7.2 Remote Control via Touchboard

On the back side of the *grandMA*, there is a 25-pin SUB-D socket (DC REMOTE CONTROL) to connect a standard Touchboard with up to 16 channels.

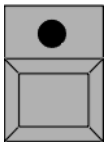
PIN 1 ... 16:	Input Channels 1 to 16
PIN 21+22:	+5 Volt (max. 100 mA)
PIN 17+18 und 24+25:	Earthing

The Touchboard input sockets only function as switches:

0 bis +2 Volt:	Off
+5 bis +15 Volt:	On

7.2.1 Assigning Playback buttons

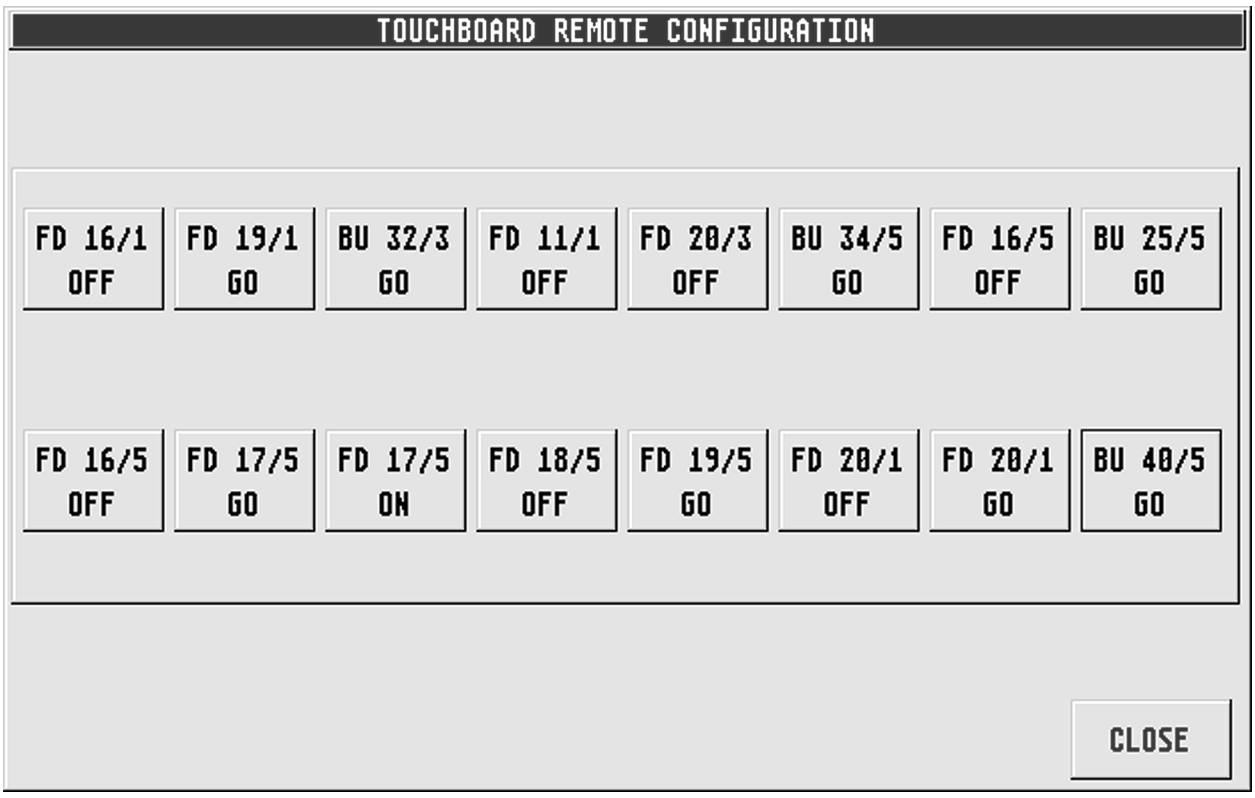
TOOLS



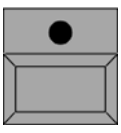
Press the TOOLS button once.

REMOTE TOUCHBOARD

Call up the TOUCHBOARD REMOTE CONFIGURATION menu using the REMOTE button.



STORE



Press the STORE button once (LED is on).

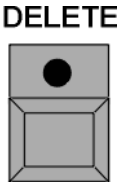
Press a button on the Touchboard, where a Playback button is to be assigned to, once.

Or:

Select a button in the REMOTE CONFIGURATION menu. Press the Playback button that you want to assign. The selected button will now be assigned.

The assigned Playback buttons will be displayed on individual buttons. Only EXECUTOR buttons can be assigned to the Touchboard.

7.2.2 Deleting Assignments

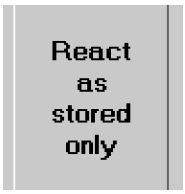


To delete an assigned Playback button, press the DELETE button once (LED is on).

Press the Touchboard button or the appropriate button once.

In the TOOLS menu, you can switch the Touchboard function on or off using the ON / OFF button.

If the Touchboard is activated, you can use all assigned buttons with the Touchboard. For optical convenience, the Button in the TOUCHBOARD REMOTE CONFIGURATION menu will have a red background when pressing a Touchboard button.



If REACT AS STORED ONLY is displayed, the assigned playback buttons will be executed directly.

Pressing this button will display COMBINED WITH COMMAND LINE COMMANDS. The assigned playback buttons will be executed in combination with the pre-selected commands.

Example: If an OFF button is programmed on a TOUCHBOARD button, but PAUSE is activated (➡ **1.7** Layout and Controls, item 11), not the OFF command, but the PAUSE command will be executed when pressing this button.

7.3 Remote Control by DMX IN

DMX IN can be used to MERGE the signals of a second control board with those of the *grandMA* and transmit them to the stage via the same line. If, during this process, channels from the *grandMA* and from the second control board are triggered, only the respective higher value will be transmitted. DMX IN will only be linked to DMX OUT A and will not be given out to the Ethernet.

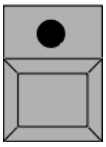
DMX-in
Merge Off

In the TOOLS menu, you can switch the MERGE function on or off by pressing the DMX-in MERGE button.

Via the DMX IN socket, assigned commands can be called up from an external DMX console. The DMX input has only the function of a switch that will release at approx. 10%.

7.3.1 Assigning Playback Buttons

TOOLS



Press the TOOLS button once.

REMOTE
DMX IN

Call up the DMX-IN REMOTE CONFIGURATION menu using the REMOTE button.

DMX-IN REMOTE CONFIGURATION

10 FD 20/3 OFF	11 FD 20/3 GO	12 FD 20/3 ON	205 FD 11/3 OFF	6 BU 21/5 GO	18 FD 16/1 OFF	--- EMPTY	--- EMPTY
11 FD 19/1 GO	1 FD 20/1 OFF	2 FD 20/1 GO	3 FD 20/1 ON	--- EMPTY	--- EMPTY	--- EMPTY	--- EMPTY
--- EMPTY	--- EMPTY	--- EMPTY	--- EMPTY	--- EMPTY	--- EMPTY	--- EMPTY	--- EMPTY
--- EMPTY	--- EMPTY	--- EMPTY	--- EMPTY	--- EMPTY	--- EMPTY	--- EMPTY	--- EMPTY
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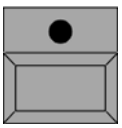
PAGE 1 CLOSE

STORE



Press the STORE button once (LED is on).

Select a button in the DMX-IN REMOTE CONFIGURATION menu.

Press the Playback button that you want to assign. The selected button will now be assigned.

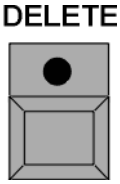
The assigned Playback buttons will be displayed on the individual buttons. Only EXECUTOR buttons can be assigned to the respective DMX channel.

7.3.2 Assigning DMX Channels

Make a right mouse click on the button. A menu will open in which you can assign one of the 512 DMX channels to this button. Identical DMX channels can be assigned to more than one button.

By pressing the PAGE 1 button, you can open another page (PAGE 2) with buttons.

7.3.3 Deleting Assignments

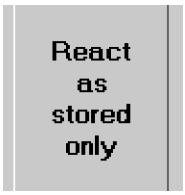


To delete an assigned Playback button, press the DELETE button once (LED is on). Press the respective DMX IN button once.

7.3.4 Using the DMX Input

In the TOOLS menu, you can switch the DMX input function on or off using the ON / OFF button.

If the DMX input is activated, you can use the assigned buttons by switching on the respective DMX input. For optical convenience, the buttons in the DMX-IN REMOTE CONFIGURATION menu will have a red background when switching on the respective DMX channel.



If REACT AS STORED ONLY is displayed, the assigned playback buttons will be executed directly.

Pressing this button will display COMBINED WITH COMMAND LINE COMMANDS. The assigned playback buttons will be executed in combination with the pre-selected commands.

Example: If an OFF button is programmed on a DMX-IN, but PAUSE is activated (➠ **1.7** Layout and Controls, item 11), not the OFF command, but the PAUSE command will be executed when calling up this DMX-IN channel.

7.4 Remote Control by MIDI

On the backside of the *grandMA*, you will find the MIDI IN, MIDI THRU and MIDI OUT sockets. Assigned commands can be called up using e.g. an external MIDI keyboard or sequencer. Devices like these can be plugged into the Midi IN socket. Only note commands will be processed. The incoming signals will be automatically transferred to MIDI THRU. Also Midi Show Control (MSC) can be processed or sent.

7.4.1 Midi Show Control

Using the console as receiver, the received MSC commands can be used only for the Master sequence.

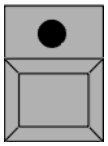
Push the button "Midi Show Control" within the Tools menu; the menu Configuraton Midi Show Control will be opened.

To receive MSC, set the device or the groups into the window „Midi IN". You can switch between Midi Enabled and Midi via Ethernet via the button below the window „Midi IN". After pushing the button „Save" all settings will be saved and the function will be started

To send MSC, set the device or the group into the window „Midi OUT". By the button „Send" you can change between sending Device, Group oder ALL.. You can switch between Midi Enabled and Midi via Ethernet via the button below the window „Midi OUT". After pushing the button „Save" all settings will be saved and the function will be started.

7.4.2 Assigning Playback Buttons

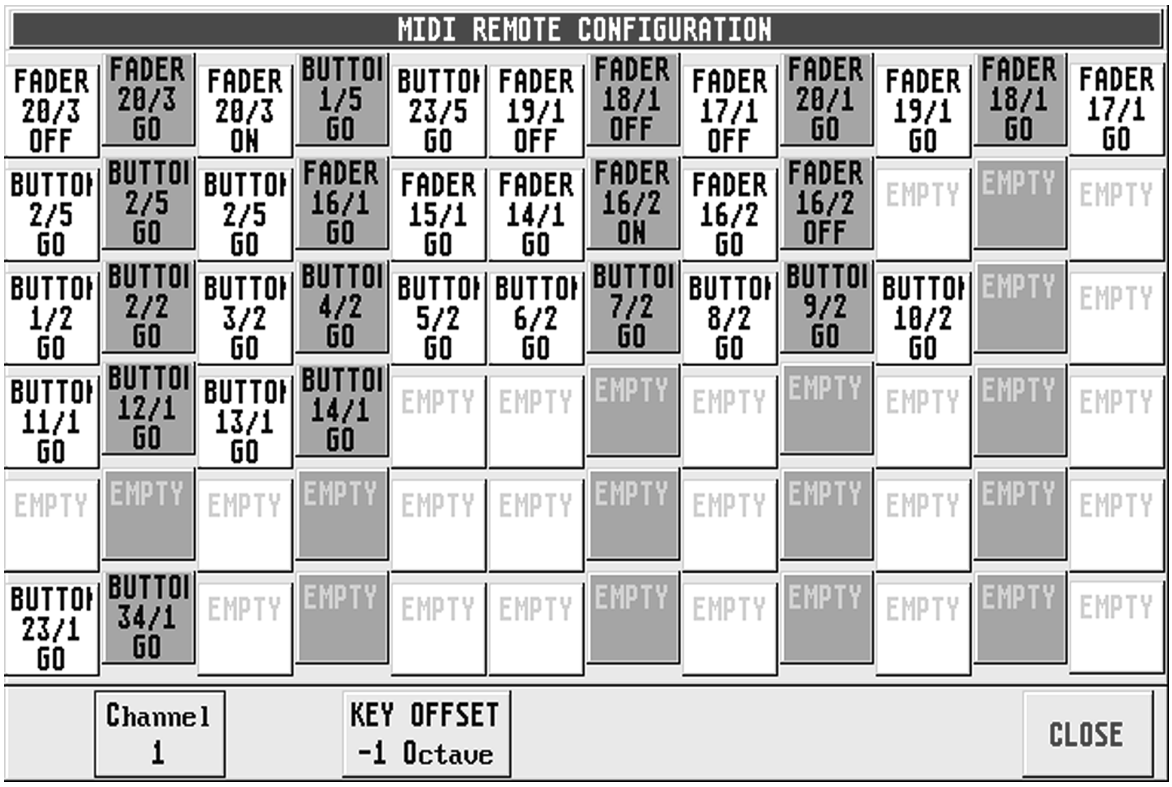
TOOLS



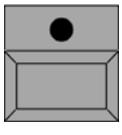
Press the TOOLS button once.

REMOTE MIDI

Call up the MIDI REMOTE CONFIGURATION menu using the REMOTE button.



STORE



Press the STORE button once (LED is on).

Select a button in the MIDI REMOTE CONFIGURATION menu.

Press the Playback button that you want to assign. The selected button will now be assigned.

The assigned Playback buttons will be displayed on the individual buttons of the MIDI REMOTE CONFIGURATION menu. Only EXECUTOR buttons can be assigned to the respective MIDI note.

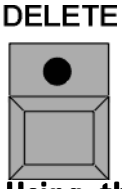
7.4.3 Selecting the MIDI Channel

Pressing the Channel button will open a menu in which you can select one of the 16 Midi channels by a simple mouse click.

7.4.4 Assigning the Pitch

By pressing the KEY OFFSET button, you can transpose the incoming notes by one octave downwards. This can be set for up to three octaves.

7.4.5 Deleting Assignments

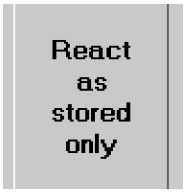


To delete an assigned Playback button, press the DELETE button once (LED is on). Press the Button once.

7.4.6 Using the MIDI Input

In the TOOLS menu, you can switch the MIDI input function on or off using the ON / OFF Button.

If the MIDI input is active, you can call up the assigned buttons by pressing the respective note keys on the MIDI keyboard. For optical convenience, the button in the MIDI REMOTE CONFIGURATION menu will have a red background when pressing a note key.



If REACT AS STORED ONLY is displayed, the assigned playback buttons will be executed directly.

Pressing this button will display COMBINED WITH COMMAND LINE COMMANDS. The assigned playback buttons will be executed in combination with the pre-selected commands.

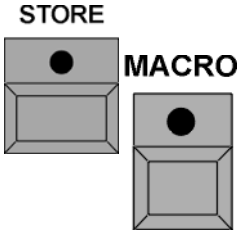
Example: If an OFF button is programmed on a DMX-IN, but PAUSE is activated (➡ **1.7** Layout and Controls, item 11), not the OFF command, but the PAUSE command will be executed when calling up this DMX-IN channel.

8 Macros und QUIKEYS

8.1 Creating Macros

With macros, you can combine several processes in one batch. These can be e.g.:

- Playback buttons (e.g. GO, Fader, Pause, etc., incl. number of the Executor)
- Call-ups of Views
- Call-ups of Delete operations
- Other Macro calls
- Call-ups of Clear operations



Press the STORE button once (LED is on).

Press the MACRO button once (LED is on). The SELECT MACRO window will open.

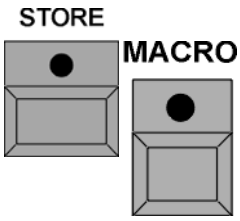
Enter a name for the Macro using the keyboard.

Press the TIMED button (will turn dark-gray) if the Macro shall not be executed as fast as possible, but within the set time frame.

Confirm with ENTER.

LED in the MACRO button flashes.

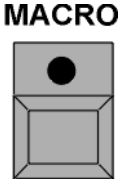
Now, enter all operational steps to be executed by this Macro.



After input of the last step, press the STORE button **first**, **after that** press the MACRO button, and **last** press ENTER (LED in the MACRO button is now off).

This completes the MACRO Programming procedure.

8.1.1 Activating Macros



Press the MACRO button once (LED is on). The SELECT MACRO window will open. Activate a Macro by a left mouse click.

Or:

Press the MACRO button once (LED is on). The SELECT Macro window will open. Enter the number of a Macro via keypad and confirm with ENTER.

Or:

Make a right mouse click on one of the VIEW buttons.

The SELECT window will open – select your MACRO here.

The SELECT MACRO window will open. Select the Macro by a left mouse click.

Now the Macro has been assigned to the VIEW button and can be activated at any time.

8.1.2 Macro Pool

In the Macro Pool, you can call up Macros directly by selection.

Make a right mouse click on an „empty" position on one of the three TFT displays or on an external monitor. The CREATE A WINDOW menu will open. ➠ **3.1** Creating Windows.

Select MACROS. The MACRO window will open. Make a right mouse click on one of the buttons; the MACRO OPTIONS window will open.

Clicking on one of the macros, this macro will be assigned to a button.

Now the macro has been assigned to a certain button and can be activated at any time.

8.1.3 Editing Macros

Press the EDIT button once. Select a Macro from the MACRO Pool.

Or:

Press the EDIT button once. Press the MACRO button once, enter the Macro number and confirm with ENTER. The EDIT MACRO window will open.

- In the LINE column, the individual calls are numbered.
- In the COMMAND column, all saved calls are displayed one by one.
- For each call, a time frame, during which the call was entered, will be displayed in the DELAY column.

Pressing the ADD LINE button will insert a step in front of the chosen position. Now, you can enter a call. If you want to use a Delay time when performing a call, click into the cell, enter a time using the keyboard, and confirm with ENTER.

To delete a call, select one and press the DELETE LINE(S) button.

To modify a call, select one and press the EDIT LINE button. Now, you can enter a new call.

If you want to modify the Delay time, click into the cell, enter a different time using the keyboard, and confirm with ENTER.

Pressing the EDIT MACRO NAME will open the EDIT NAME window. Now, you can enter a new name using the keyboard and confirm this with ENTER.

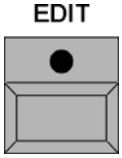
If the TIMED button is switched on, the calls of this Macro will be executed with the set DELAY times. Pressing this button once will switch the display to NO TIMED. In the Sheet, the DELAY times will be displayed on a dark background, and the Macro will be executed without time limit.

You can leave the menu with the CLOSE button.

8.2 Assigning and Activating QUIKEYS

You can display and call up various operation buttons and functions in the QUIKEY window (Display Softkeys).

Create a QUIKEY window ➠ **3.1** Creating a Window



Press the EDIT button briefly and click on a button in the QUIKEY window.

or:

Make a right mouse click on a button. The QUIKEY OPTIONS window will open.

Clicking on one of the functions will assign this one to the button.

This function can be called up any time by clicking on it.

List of functions:

ALIGN OFF: Switches off the ALIGN function.
ALIGN LEFT: ALIGN button pressed once
ALIGN RIGHT: ALIGN button pressed twice
ALIGN BOTH: ALIGN button pressed three times
ALIGN SYM: ALIGN button pressed four times
CLEAR SELECTION: CLEAR button pressed once
CLEAR ACTIVE: CLEAR button pressed twice
CLEAR RELEASE: CLEAR button pressed three times
VALUES MODE: Switches the FIXTURE and CHANNEL SHEET to the VALUES mode
FADE MODE: Switches the FIXTURE and CHANNEL SHEET to the FADE time mode
DELAY MODE: Switches the FIXTURE and CHANNEL SHEET to the DELAY time mode
ASSIGN: ASSIGN button
EMPTY: Creates an empty button
FLIP:
- Head Fixtures:
  - Pressing 1x: The head will be turned and the light beam be directed to the same target position.
  - Pressing 2x: The head will be turned again and the beam be directed to the last identical position. (This is only possible for fixtures that have a PAN value of more than 360°, otherwise, only 2 positions are possible.)
  - Pressing 3x: The head will be turned to the first position.

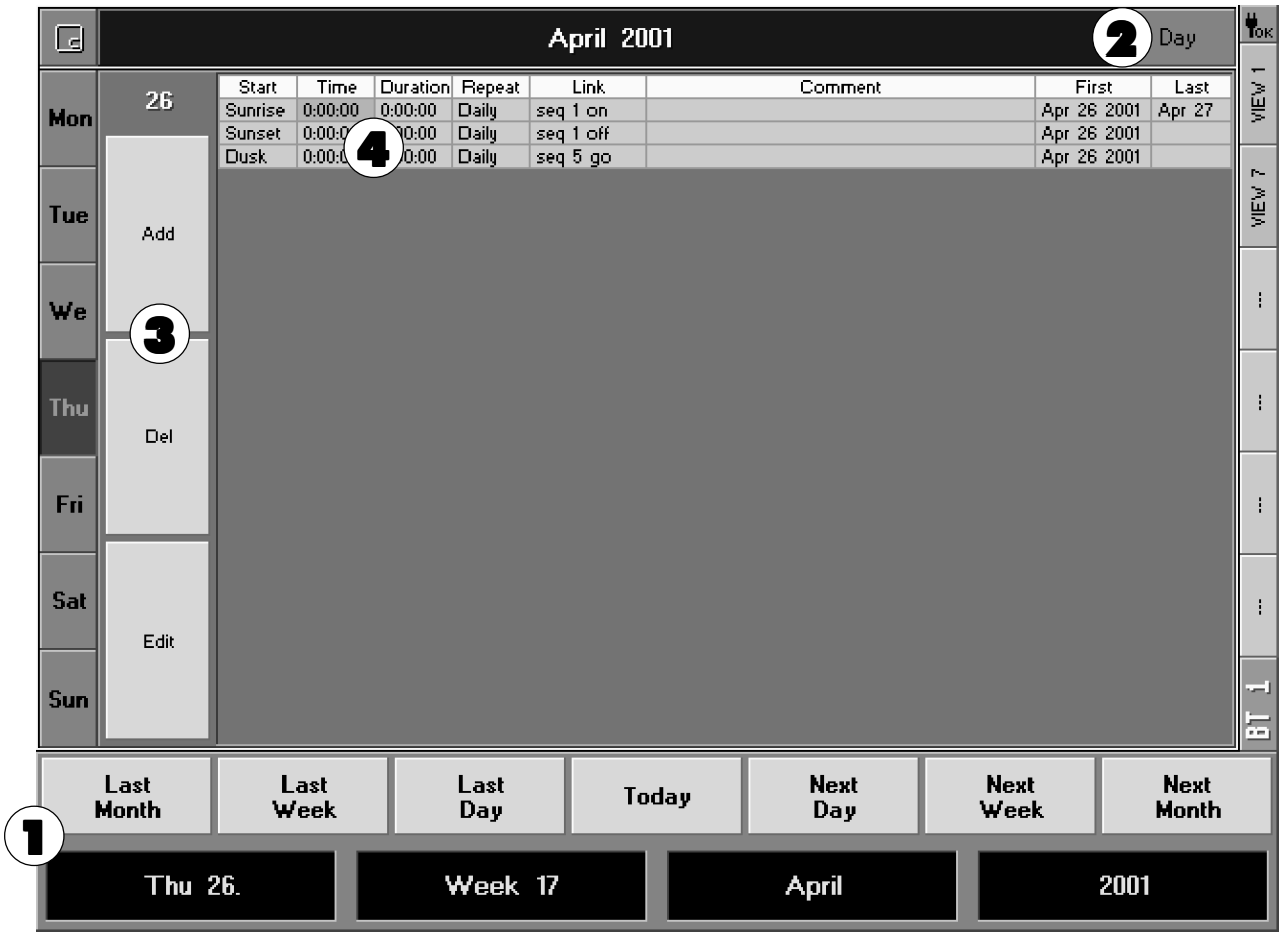
  When using head Fixtures, the FIXTURE SHEET will show a yellow square left of the PAN value, symbolizing the current head position.
- Mirror Fitxures:
  The PAN/TILT value will be inverted, the mirror will be positioned in opposition.

– (minus): Minus key
STORE: STORE button
EDIT: EDIT button
UPDATE: UPDATE button
ESCAPE: ESCAPE button
ENTER: ENTER button
ALL SELECTION: Selects **all** FIXTURES and CHANNELS (this can be necessary after using the NEXT/PREV).
ODD SELECTION: Selects all **odd** FIXTURES and CHANNELS
EVEN SELECTION: Selects all **even** FIXTURES and CHANNELS
INVERT SELECTION: Allows to invert the selection.
- If fixture/dimmer values are activated, but only part of those fixtures/dimmers are selected, you can delete the current selection and select the other fixtures/dimmers by pushing the INVERT SELECTION button and ENTER.
- When selecting a group, you can exchange the current selection for that made by the group (all prior selections will be deleted, even the ones, which might be in the newly selected group).

DELETE: Delete button
MOVE: MOVE button
COPY: COPY button
BACKUP: BACKUP button
SETUP: SETUP button
TOOLS: TOOLS button
PREVIOUS: PREV. button
NEXT: NEXT button
TRACKBALL SPEED: Toggles the TRACKBALL between coarse and fine.
ENCODER SPEED: Toggles the ENCODER between coarse and fine; further toggling is achieved by pressing on the ENCODER.

8.3 Agenda Menu

Here you can execute Macros at a certain time and date or at sunrise or sunset.



1 You can choose a different Edit Date by help of the encoders or the buttons on top.

2 Pressing this button, you can switch between day, week, month or year in this display.

3 If DAY is chosen, the ADD, DEL and EDIT buttons will be displayed.
Pressing the ADD button will include a new column in the sheet, where you can set the programming for automatic control.
If a column is selected, you can delete it by pressing the DEL button.
If a cell is selected, you can change the function / time by pressing the EDIT button.

4 All created automatic sequences will be displayed in this sheet.

Selecting a cell within a column and pressing the encoder briefly, will open a window to enter the following:

Start: Absolute: The Macro will be started at the set time.
Dawn: The Macro will be started at the calculated dawn.
Sunrise: The Macro will be started at the calculated sunrise.
Sunset: The Macro will be started at the calculated sunset.
Dusk: The Macro will be started at the calculated dusk.
➡ **2.17** Menu TIME & DATE item 2

Time: If ABSOLUTE is selected in this line under „Start", a time can be set for the Macro to start.
If DAWN, SUNRISE, SUNSET or DUSK is selected in the start column, you can enter between -1 to +1 hour. Consequently, the Macro will be started either 1 hour earlier or later than the calculated time.

Duration: If the unit is powered up later than the time necessary for automatic control, a time setting within this column (up to 8 hours) can delay the start of the Macro after power-up (delay of up to 8 hours).

Repeat: NONE will execute this programming only one time.
DAILY, WEEKLY, MONTHLY or YEARLY will execute the programming according to the set „rhythm".

Link: Here you have to create a Macro, which will be started at the given times.

You can enter a comment, using the keyboard.

First: If a programming is displayed with black background in the sheet, this programming will be repeated on the current day. This cell shows the date, on which the programming has first been executed.

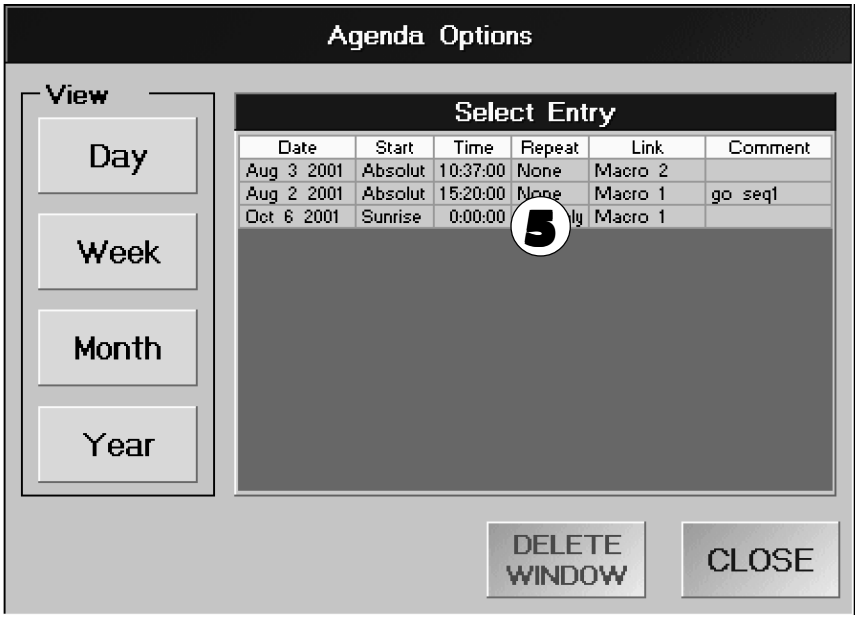
Last: Here, ou can enter a date for the programming to be executed for the last time. If a programming is displayed with black background in the sheet, this programming would be repeated on the current day. This cell shows the date, on which the programming will be executed for the last time.

Agenda Options

Touch the touch screen on the left corner of the title bar.

Or:

With a right mouse click on the title bar, you can open the Agenda Options window.



5 The table will show all created Sequences. The respective entry will be triggered automatically when selected.

9 Command line

9.1 Introduction

This document is trying to describe all functionality of the grandMA desk family that can be done with command line operation.
The meaning of "command line operation" is, that you need no mouse or touchscreen. Instead you are using the "hard keys" for entering commands.

9.1.1 Quikeys

On some machines like the grandMA replay unit, you may not find all of the described hard keys. In spite of this little disadvantage, you can create a QUIKEY pool window on the screen and arrange the wanted but missing functions there. Then simply use these "soft keys" instead of the hard keys.

9.1.2 Double functions of hard keys

Because there is not enough space for each function to have its own key, some hard keys have an alternative function at the second or even the third push. These keys are

Hard key	First press	Second press	Third press
ASSIGN	ASSIGN	LABEL	
CHANNEL	CHANNEL	DMX	
EXEC	EXEC	FADER	
GOTO	GOTO	LOAD	
IF	IF	IFOUTPUT	
MOVE	MOVE	INSERT	
PRESET	PRESET	FEATURE	
TIME	FADE	DELAY	VALUE
VIEW	VIEW	VIEWBUTTON	
EFFECT	EFFECT	Call effect view	
GROUP	GROUP	Call submaster view	
PAGE	PAGE	Call total page view	

9.1.3 Messages

Sometimes the command line is asking you something upon execution, or it is informing you about something that went wrong.
If such a message or a question window appears on the screen, use the NEXT and PREVIOUS hard keys to select the appropriate answer (the button with the thick blue border) and then hit ENTER. Also ESC is working fine for simple messages or warnings. If there is a more complex question and you hit ESC, the action is considered to be CANCELED.
Every command line action that succeeds will appear in the history of all command line windows. A failure will only produce an error beep.

9.1.4 Command line window

Of course you want to see the commands that you give to your desk. Open a command line window on the screen. There you can see what you enter.

9.1.5 Using the PC keyboard

Some users may find it convenient to use the PC keyboard for command line input. Open a command line window on the screen. Whenever this window has the input focus (title is shown in deep blue), all keystrokes of the PC keyboard go into the command line. If the input focus goes somewhere else, the PC keyboard will no more work with the command line. Touching the title or the bottom line of the command line window will give the input focus back to it.
For permanent use of the PC keyboard as command line input, press the SCROLL LOCK key. You will hear a little beep, the SCROLL LOCK lamp is on, indicating that the PC keyboard is now locked to command line operation.
If the PC keyboard is locked, you can not use it for other operations like naming presets etc. But another push of the SCROLL LOCK key will unlock it.

If you are using the PC keyboard as command line input, you can only enter valid commands and values. If you try to enter FIQQQ the command line starts screaming upon the first Q because until there it could be FIXTURE or FIX but it does not know any word that continues with Q.
In most cases it is not necessary to enter the full name of a keyword, like F would be totally sufficient for FIXTURE.
You can find all keywords and their shortest form in section 9.2 command overview.

9.1.6 Using command line history

It is possible to bring back old command from the history into the current command line.
There they can be changed and executed again.

a) - Click into the history of a command line window
- Or scroll with the XY encoder if the command line window has the focus
- Or use the UP and DOWN cursor keys on the PC keyboard if the command line window has the focus (or the PC keyboard is locked to the command line).
b) Edit the command line if you want
c) Press ENTER. The command line will be executed.

9.2 Command Overview

Here comes the complete list of all possible keywords in the command line.

Keyword: As it appears in the command line.	**Shortcut:** Shortest possible form of the keyword when using PC keyboard.	**Hard key:** How to enter the keyword into the command line.	**Operation:** Rough description of the meaning. For a real explanation see chapter 3.
+	+	+	Plus
-	-	-	Minus
<<<	<	<<<	Go Back Fast
>>>	>	>>>	Go Forward Fast
ALL	ALL	QUIKEY	All selection (with ODD/EVEN)
ALL_CHASES	ALL_C	CONSOLE	Accessing all executors with chases
ALL_SEQUENCES	ALL_S	CONSOLE	Accessing all executors with sequences
ASSIGN	AS	ASSIGN	Assign <source> <destination>
AT	A	AT	At , give value
CHANNEL	C	CHANNEL	Channel
CLEAR	CL	CLEAR	Progressively clear programmer
CLEAR_ACTIVE	CLEAR_A	QUIKEY	Deactivate programmer
CLEAR_ALL	CLEAR_ALL	QUIKEY	Total clear of programmer
CLEAR_SELECTION	CLEAR_S	QUIKEY	Clear selection
COPY	CO	COPY	Copy <source> at <destination>
CUE	CU	CUE	Cue
DEF_GO	DEF	Yellow GO	Go forward for default executor
DEF_GO-	DEF_GO-	Yellow GO-	Go back for default executor
DEF_PAUSE	DEF_P	Yellow Pause	Pause for default executor
DELAY	DELA	**2 x TIME**	Enter delay mode or give delay time
DELETE	D	DELETE	Delete <destination>
DMX	DMX	DMX	DMX address
DMX_BTN	DM	CONSOLE	Remote DMX button
EDIT	ED	EDIT	Edit <destination>
EFFECT	EF	EFFECT	Effect
ESC	ES	ESCAPE	Escape , close dialogs
EVEN	EV	QUIKEY	Even selection (with ALL/ODD)
EXEC	E	EXECUTOR	Executor
FADE	FADE	**1 x TIME**	Enter fade mode or give fade time
FADER	FADER	**2 x EXEC**	Fader, access executor faders
FADERBUTTON1	FADERBUTTON1	Hit Executor	Middle button of executor section
FADERBUTTON2	FADERBUTTON2	Hit Executor	Lower button of executor section
FADERBUTTON3	FADERBUTTON3	Hit Executor	Upper button of executor section
FEATURE	FE	**2 x PRESET**	Single feature like PAN
FIX	FIX	FIX	Fixing executors
FIXTURE	F	FIXTURE	Fixture
FLASH_DOWN	FLASH_D	CONSOLE	Downflash executor
FLASH_DOWN_OFF	FLASH_DOWN_O	CONSOLE	End of Downflash

FLASH_UP	FLASH_U	CONSOLE	Upflash executor
FLASH_UP_OFF	FLASH_UP_O	CONSOLE	End of Upflash
FORM	FO	CONSOLE	Form, used by effects
FULL	FU	FULL	Full, equals 100%
GO	GO	GO	Go forward
GO-	GO-	GO-	Go backwards
GOTO	GOT	GOTO	Goto <cue>
GROUP	G	GROUP	Group
IF	IF	IF	If (logical AND for selections)
IFOUTPUT	IFO	2 x IF	If Output, create selection from output
INSERT	I	**2 x MOVE**	Insert <source> at <destination>
INVERT	INV	QUIKEY	Invert <destination> , inverting selection
LABEL	LA	**2 x ASSIGN**	Label <destination> "Name" give a name
LEARN	L	LEARN	Learn, change speed of running programs
LOAD	LO	**2 x GOTO**	Load <Cue>
MACRO	M	MACRO	Macro
MIDI_BTN	MI	CONSOLE	Remote Midi Button
MOVE	MO	MOVE	Move <source> at <destination>
NEXT	N	NEXT	Next device of current selection
ODD	OD	QUIKEY	ODD selection (with ALL/EVEN)
OFF	OF	OFF	Off, switch something off
ON	ON	ON	On, switch something on
OOPS	O	OOPS	Oops, I made a mistake -> Undo
PAGE	PA	PAGE	Page
PAUSE	PAU	PAUSE	Pause something
PRESET	PR	PRESET	Preset type or Preset
PREVIEW	PREV	PREVIEW	Preview something
PREVIOUS	P	PREVIOUS	Previous device of current selection
SELECT	SE	SELECT	Select <executor> , select default executor
SEQU	S	SEQU	Sequence (Cuelist)
STORE	ST	STORE	Store
SWOP	SW	CONSOLE	Swop executor
SWOP_OFF	SWOP_O	CONSOLE	End of swop
TEMP	TE	TEMP	Temporary run executor
THRU	T	THRU	Through, to enter ranges
TIMECODE	TI	CONSOLE	Timecode show
TOGGLE	TOG	CONSOLE	Toggle running status of executor
TOP	TOP	TOP	Call first cue of executor
TOUCH_BTN	TO	CONSOLE	Remote Analog input button
UNPRESS	UN	CONSOLE	Release of command
UPDATE	U	UPDATE	Update
VALUE	VA	**3 x TIME**	return to value mode
VIEW	V	VIEW	View, contents of one or multiple screens
VIEWBTN	VIEWB	**2 x VIEW**	Viewbutton, hardkey beside screens

9.3 Command Reference

In this chapter, all commands are explained with their exact syntax, demonstrating all possibilities. For instructions on complete procedures, like how to create a sequence and then run it, you have to look into the following chapters.

9.3.1 Key word classifications

In the following descriptions, the term **starting keyword** will appear very often.

This "starting keyword" is every keyword that you start a new command line operation with.

Basic operational keywords

A basic operational keyword in the command line is determining a basic operation.

These keywords can only appear as starting keyword in the command line.

The only exception from this rule is the AT command. AT can follow a list of object keywords and will still be interpreted as operational keyword.

Operational keywords expect object keywords as targets for their operation, using helping keywords sometimes.

Keyword	Operation
ASSIGN	Assign one object to another, like assigning a sequence to an executor.
AT (operational form)	Set a value to something.
COPY	Make a copy of an object.
DELETE	Delete an object.
EDIT	Edit an object.
IFOUTPUT	Create a selection depending on an objects stage output.
INSERT	Insert an object at another location.
INVERT	Invert the selection.
LABEL	Change name of an object
MOVE	Move an object to another location.
PREVIEW	Have a look at an object without stage output.
STORE	Store data into an object.
UPDATE	Update data of active object. Active objects create stage output.

Executing Keywords

Executing keywords may be used as starting keywords, or as source in an assign operation.
As starting keywords they expect object keywords as targets for their operations.

Keyword	Operation
<<<	Go fast backwards
>>>	Go fast forward
FIX	Fix an executor. This executor will ignore page changes.
FLASH_DOWN ~_OFF	Temporary down flash of executor.
FLASH_UP ~_OFF	Temporary up flash of executor
GO	Go forward.
GO-	Go backwards
GOTO	Goto cue
LEARN	Learn speed
LOAD	Prepare next step of executor, wait for GO.
OFF	Switch off something.
ON	Switch on something.

PAUSE	Pause
SELECT	Select default executor.
SWOP ~_OFF	Temporary up flash for executor and downflash for all others.
TEMP	Temporarily run an executor.
TOGGLE	Toggle executor on and off.
TOP	Goto first cue.

Object Keywords

Object keywords are used as targets by basic operational keywords and by executing keywords. They are representing data, that can be manipulated.

Keyword	Meaning
ALL_CHASES	All executors assigned as chasers.
ALL_SEQUENCES	All executors assigned as sequence.
CHANNEL	A conventional light.
CUE	One step or memory of a cuelist.
DMX	A DMX channel.
DMX_BTN	A Remote triggered by incoming DMX signals.
EFFECT	An freely editable effect generator.
EXEC	An executor is the physical front end for executing sequences etc.
FADER	One of the 20 executor faders.
FADERBUTTON1	The middle button of an executor colum.
FADERBUTTON2	The lower button of an executor colum.
FADERBUTTON3	The upper button of an executor colum.
FIXTURE	A complex light that has more than just a dimmer channel.
FEATURE	A feature inside a fixture, like PAN or IRIS.
FORM	A 1 or 2 dimensional path, used by effects.
GROUP	A collection of fixtures and channels.
MACRO	Can do complex command line operations.
MDI_BTN	A Remote triggered by incoming MIDI signals.
PAGE	A page is one set of visible executors.
PRESET	A memory that can be used indirectly as a placeholder.
SEQU	A sequence consists of one or more cues.
TIMECODE	A timecode show consists of many timed playback instructions for executors. Can be synchronised with incoming SMPTE or MIDI signals.
TOUCH_BTN	A Remote triggered by hardwired analogue 0/10 V inputs.
VIEW	Stores a display arrangement.
VIEWBTN	A physical button that can call views and macros.

Helping keywords

The meaning of helping keywords depends very much upon the context in which they are used.

Keyword	Used ...
+	Everywhere ...
-	Everywhere ...
AT (helping form)	by COPY/MOVE etc.
DELAY	In executing commands ,AT, STORE etc
FADE	In executing commands, AT,STORE etc
FULL	As value 100 %
IF	In selections
THRU	In ranges
UNPRESS	After executing keywords

Immediate Keywords

These keywords expect no parameters.

Keyword	Operation
ALL	Restores selection after ODD/EVEN NEXT/PREVIOUS.
CLEAR	Progressively clear the programmer.
CLEAR_ACTIVE	Clear the values in the programmer.
CLEAR_ALL	Totally clear programmer at once.
CLEAR_SELECTION	Clear the current selection.
DEF_GO	Go forward for default executor
DEF_GO-	Go back for default executor
DEF_PAUSE	Pause the default executor.
ESC	Escape from input or menu.
EVEN	Select even devices inside current selection.
NEXT	Select next device inside current selection.
ODD	Select odd devices inside current selection.
OOPS	Oops, I mad a mistake -> Undo
PREVIOUS	Select previous device inside current selection
VALUE	Switch back from fade or delay to value mode.
UPDATE	Update data of active object. Active objects create stage output.

The DEFAULT keyword

The command line has a so called DEFAULT keyword.
Whenever you **start a new command line with numeric values**, this default keyword will be put in front.

Assuming that the default keyword is CHANNEL. Then you are typing in:
1 ENTER. In the command line will appear CHANNEL 1 ENTER.

If the command line is empty, the current default keyword is shown by:
a) the according LED of the hard key
b) the command line window

The following keywords can be the default keyword:

CHANNEL *	PAGE
FIXTURE *	MACRO

GROUP	PRESET
SEQU	VIEW
CUE	EFFECT
EXEC	

The default keyword is also used by operational keywords.

Assuming that the default keyword is GROUP. Then you are typing in:

DELETE 1 ENTER. As a result, GROUP 1 will be deleted !

An exception to this are the keywords CHANNEL and FIXTURE. If they are the default keywords, operational keywords will use CUE as default keyword !

If CHANNEL is the default keyword. STORE 5 ENTER will do STORE CUE 5 !

9.3.2 Ranges and Range Lists

Many commands are able to operate on a list of objects.

Instead of typing

DELETE SEQU 1 ENTER

DELETE SEQU 2 ENTER

DELETE SEQU 10 ENTER

you can write

DELETE SEQU 1 THRU 2 +10 ENTER.

A range can have the following formats:

X	only object X
X THRU Y	from object X to object Y
X THRU	from object X to the last object
THRU Y	from the first object to object Y
THRU	all objects

Please note, that ranges have a direction. Especially when creating selection, it makes a big difference if you type FIXTURE 1 THRU 10 or if you type FIXTURE 10 THRU 1.

Ranges can be combined to Range Lists:

OBJECT_KEYWORD Range1 +/- [OBJECT_KEYWORD] Range2 ...

It is not necessary to repeat the OBJECT_KEYWORD in the range list.

9.3.3 Detailed keyword list

+ (Plus)

Classification : helping keyword

a) As starting keyword, + enlarges the current selection. Everything that follows after the plus will be interpreted as a selection:

+ CHANNEL,FIXTURE,GROUP,SEQU,CUE,EXEC,PRESET,EFFECT

b) In object lists it is including objects:

... OBJECT 1 + OBJECT 2 ....

c) In front of values it is changing the value to a positive relative value:

CHANNEL 1 AT +10 ENTER will increase the dimmer value by 10%.

d) As a starting keyword, and permanently **repeated**, + is increasing the dimmer values of the current selection by 10% every time you press +.

- (Minus)

Classification : helping keyword

a) As starting keyword, - reduces the current selection. Everything that follows after the minus will be interpreted as a selection:

- CHANNEL/FIXTURE/GROUP/SEQU/CUE/EXEC/PRESET/EFFECT

b) In object lists it is excluding objects:

... OBJECT 1 THRU 10 - OBJECT 2 ....

c) In front of values it is changing the value to a negative relative value:

CHANNEL 1 AT -10 ENTER will decrease the dimmer value by 10%.

As a starting keyword, and permanently **repeated**, - is decreasing the dimmer values of the current selection by 10% every time you press -.

<<< (Go fast backwards)

Classification : executing keyword

a) **As starting keyword**, every object that follows after the <<< will try to **go back** one step with **zero fade time**.

<<< (target object list) [ENTER]

Target type	Operation
EXEC	Go backwards one step with no fade time
EFFECT	Start running backwards without fading in
TIMECODE	Jump to the previous breakpoint
PAGE	Does <<< on all its executors.
SPEEDMASTER (executor assigned to a speed master)	Does <<< on all programs using this speed master

b) In an assign command**, this function can be put on an executor button (see ASSIGN).**

>>> (Go fast forward)

Classification : executing keyword

c) As starting keyword**, every object that follows after the >>> will try to** go forward **one step with** zero fade time.

>>> (target object list) [ENTER]

Target type	Operation
EXEC	Go forward one step with no fade time
EFFECT	Start running forward without fading in
TIMECODE	Jump to the next breakpoint
PAGE	Does >>> on all its executors.
SPEEDMASTER (executor assigned to a speed master)	Does >> on all programs using this speed master

d) **In an assign command**, this function can be put on an executor button (see ASSIGN).

ALL

Classification : immediate keyword

ALL is clearing any sub-selection made with ODD EVEN NEXT and PREVOIUS.

ALL_CHASES

Classification : object keyword

ALL_CHASES is an alias for the expression ALL EXECUTORS THAT ARE ASSIGNED AS CHASES. It can be used wherever EXEC could be used. Example:

PAUSE ALL_CHASES ENTER

ALL_SEQUENCES

Classification : object keyword

ALL_SEQUENCES is an alias for the expression ALL EXECUTORS THAT ARE ASSIGNED AS SEQUENCE. It can be used wherever EXEC could be used. Example:

OFF ALL_SEQUENCES ENTER

ASSIGN

Classification : operational keyword

ASSIGN (source objects) (destination objects) [ENTER]

Source objects : a list of objects which are all of the same type.

Destination objects: a list of objects which are all of the same type

Source object type	Possible destination object type
Executing keyword	EXEC,FADERBUTTON1/2/3
SEQUENCE	EXEC,FADERBUTTON1/2/3
GROUP	EXEC,FADERBUTTON1/2/3
EFFECT	EXEC,FADERBUTTON1/2/3
VIEW	VIEWBTN
MACRO	VIEWBTN

Executor buttons and view buttons as hard keys automatically do the ENTER.

AT

Classification : operational and helping keyword

a) As operational keyword:

AT TYPE 1: Giving dimmer values directly

[(destination objects)] AT values [FADE fades] [DELAY delays] ENTER

Destination objects: A list of objects that can create selections. Usable keywords are: CHANNEL,FIXTURE,GROUP,SEQU,CUE,PRESET,EFFECT. If no destination objects are given, the current selection will be used.

Values: VALUE_X [THRU VALUE_Y] in percent

Fades: FADE_X [THRU FADE_Y] in seconds

Delays: DELAY_X [THRU DELAY_Y] in seconds

Values, fades and delays are decimal numbers with dots (e.g. FADE 1.5).

Examples:
CHANNEL 1 THRU 10 AT 20 FADE 2.5 DELAY 0 THRU 5 ENTER
Try to find out yourself what this operation does ...

CUE 1 AT FULL ENTER
This will set the dimmer of all devices contained in CUE 1 of the default executor to 100%.

AT TYPE 2: Copying values with filtering:

[(destination objects)] AT [set AT filtering] (source objects) ENTER

Destination objects: Same as above.

Source objects: A list of objects that can supply values. Usable keywords are: CHANNEL,FIXTURE,GROUP,SEQU,CUE,PRESET.

Set AT filtering: Keep AT pressed. After half a second the AT filter menu will appear. Change the filtering while you keep AT pressed.

If the source objects are CHANNEL, FIXTURE or GROUP, the operation will be a

FILTERED COPY INSIDE THE PROGRAMMER
All values except default values will be copied if they pass the filter !

Examples:
FIXTURE 2 THRU 10 AT (select CMY colour mixing) FIXTURE 1 ENTER
This command will copy the CMY colour of fixture 1 to fixtures 2 THRU 10.

You can copy patterns: Set fixture 1 to BLUE and fixture 2 to GREEN.
FIXTURE 3 THRU 10 AT (select colour) FIXTURE 1 THRU 2 ENTER
Fixture 3 will be BLUE, 4 is GREEN, 5 is BLUE, 6 is GREEN ...

Source and destination devices can overlap:
FIXTURE 1 THRU 10 AT (select all features) FIXTURE 2 THRU 10 + 1 ENTER
This will perform a circular copy, shifting the values from device to device.

If the source objects are SEQU,CUE or PRESET, the operation will be a

FILTERED EXTRACTION TO THE PROGRAMMER
All values that exist in the source for the destination devices will be copied if they pass the filter !

Examples:
FIXTURE THRU AT (select PAN/TILT) CUE 1 ENTER.
This will bring all PAN/TILT information contained in CUE 1 of the default executor active into the programmer.

CUE 5 AT (select GOBO) CUE 4 ENTER.
Devices of cue 5 get the gobos of cue 4 (of course only if the gobos were programmed into cue 4).

CUE 5 AT (select GOBO) CUE THRU 4 ENTER
Devices of cue 5 get the gobos **of the STATUS** of cue 4 ! This is a big difference to the last example !!!

b) **As helping keyword**: See COPY MOVE and INSERT.

CHANNEL

Classification : object keyword

a) **as starting keyword**:

CHANNEL ENTER
CHANNEL becomes the DEFAULT KEYWORD.

CHANNEL (range list) ENTER
Select channels in range list.

CHANNEL (range list) AT ... (see AT)
Apply values to channels in range list.

Channel numbers in the range list must be in the interval [1 ... 9999].

b) **as target for the following executing commands**:

ON	activate dimmer value in programmer.
OFF	deactivate dimmer value in programmer and deselect channel.
PAUSE	PARK dimmer value of channel.
GO	UNPARK dimmer value of channel.

CLEAR

Classification : immediate keyword

Progressively performs:

1) If there is a selection -> CLEAR_SELECTION

2) If there is an activation -> CLEAR_ACTIVE

3) If there is stage output from programmer -> CLEAR_ALL

CLEAR_ACTIVE

Classification : immediate keyword

Clears the activation in the programmer without destroying stage output.

CLEAR_ALL

Classification : immediate keyword

Clears the selection.
Clears the activation.
Clears the programmer totally, all values set to default values.
ODD/EVEN/Sub-selection is reset to ALL.

CLEAR_SELECTION

Classification : immediate keyword

Clears the selection. No device is selected.
ODD/EVEN/Sub-selection is reset to ALL.

COPY

Classification : operational keyword

COPY (source objects) AT (destination objects) [ENTER]

Source objects : a range list of objects which are all of type X.
Destination objects: a range list of objects which are all of type Y

Object types X and Y must be equal or compatible.

Source object types	Compatible destination object types
EXEC	EXEC
FADERBUTTON/123	FADERBUTTON/1/2/3
DMX_BUTTON	DMX_BUTTON
MIDI_BUTTON	MIDI_BUTTON
TOUCH_BTN	TOUCH_BTN

In this software version, there are some limitations for copying CUES:

1) A range list of cues can be
   a. A single cue e.g. CUE 1
   b. A range of cues. e.g. CUE 1 THRU 10
2) Also the destination object must be a CUE.
   Therefore the syntax COPY CUE 1 SEQU 1 AT SEQU 2 ENTER is not allowed.
   Instead you must write COPY CUE 1 SEQU 1 AT CUE 2 SEQU 2 ENTER.

   Please note, that CUE 1 SEQU 1 equals the term SEQU 1 CUE 1. Whenever the term contains CUE, you are copying CUES !

CUE

Classification : object keyword

General Format:

Expression	Normal meaning	In case of STORE
CUE	Current active cue of running default executor	New cue at the end in default executor
CUE X	Cue X of default executor	
CUE X SEQU Y	Cue X of sequence Y	
SEQU Y CUE X	Same as above !	
CUE EXEC Z	Current active cue of running executor Z	New cue at the end in executor Z
CUE X EXEC Z	Cue X of executor Z	

X Cue number in format A.B with intervals [0...999].[0...999] , B is optional.
"CUE 0" is invalid, but "CUE 0.5" is valid.

Y Sequence number in interval [1 ... 999]

Z Executor number in format PAGE.INDEX with intervals [1 ... 64].[1...60] ,
or in format INDEX with interval [1...60] using current page.

Either X or Y,Z can be range lists. Range lists with X and Y,Z are not allowed. Therefore:
CUE 1 THRU 10 SEQU 1 is valid
CUE 1 TRUE 10 SEQU 1 THRU 5 is invalid

a) **as starting keyword**:

CUE ENTER

CUE becomes the DEFAULT KEYWORD.

CUE (range list) ENTER

Select devices included in cue(s).

CUE (range list) AT ... (see AT)

Apply values to devices included in cue(s).

b) **as target for the following operational commands**:

AT	Extract data from cue
COPY	Copy one cue to another
DELETE	Delete a cue
EDIT	Edit a cue
IF	Deselect devices which are not part of the cue.
IFOUTPUT	Search for stage output of cue
INVERT	Invert selection of cue
LABEL	Change name of cue
MOVE	Move cue to another position
PREVIEW	Preview cue

c) **as target for the following executing commands**:

ON	activates content of cue in programmer.
OFF	deactivate content of cue in programmer.
PAUSE	PARK all features included in cue.
GO	UNPARK all features included in cue.
LOAD	Prepare cue X as next cue for executor Z.
GOTO	Executor Z is calling cue X

DEF_GO

Classification : immediate keyword

Is performing a GO on the default executor.

DEF_GO-

Classification : immediate keyword

Is performing a GO- on the default executor.

DEF_PAUSE

Classification : immediate keyword

Is performing a PAUSE on the default executor.

DELAY

Classification : helping keyword

a) With executing keywords and executors
(Executing keyword) (Executor List) DELAY X.X ENTER
The execution command is performed on all listed executors with a snap delay overwrite of X.X seconds. Does not work with PAUSE or flashing commands.

b) Giving individual delay times to fixtures or channels:
[Selection] AT DELAY X.X [TRHU Y.Y] ENTER
Individual delays for the feature shown in the presetbar will be set to X.X seconds.
If no selection is given, the current selection is used.
Please note that the given delay may be a range. In this case, delays will be aligned over the given selection.
The given delays can be signed, which will result in relative changes of individual delays.
Giving individual delays can be combined with giving individual fades and values into one AT command.

c) Clearing individual delays:
[SELECTION] AT DELAY ENTER
Works very much like b), but no value for the delay is given.

d) Setting default snap delay:
(No selection present) DELAY X.X ENTER
The next cue will be stored with X.X seconds snap delay default for all snap channels.

e) As snap delay when storing a cue:
STORE (List of Cues) DELAY X.Y ENTER
The given cues will be stored with a snap delay default of X.Y seconds for all snap channels.

f) Switching to delay display mode:
DELAY ENTER
All sheets wich are set to AUTO display mode, will display delays instead of values. This effect is only temporary. All sheets will switch back to value mode upon ending of the next command line operation.

DELETE

Classification : operational keyword

DELETE (object list) ENTER

Some forms of delete will need no ENTER in the end:
DELETE (hit button in a pool)
DELETE [CUE] X (hit executor button)
DELETE (hit viewbutton)

All objects in the list must be of the same type. You can not delete a preset and a cue at one time.
Deleting an object that is assigned to an executor will also delete the executor.
Deleting an object that is assigned to a viewbutton will also delete the viewbutton.

Object	Comment
CUE	If no sequence or executor is specified, the sequence of the default executor is used. If the last cue of a sequence is deleted, the whole sequence is deleted.
DMX_BTN	
EFFECT	Do not delete effects which are used by sequences.
EXEC	Deleting an executor does not delete the sequence, group etc. assigned to it.
FORM	Do not delete forms which are still in use by effects.
GROUP	Deleting a group will also kill its submaster functionality.
MACRO	You can not delete a macro that is currently recording.
MIDI_BTN	
PAGE	Deleting a page will delete all executors on that page.
PRESET	Deleting single presets is done with the syntax PRESET X.Y with X=preset type and Y=preset number. DELETE PRESET X will ask for confirmation and delete all presets of the given type.
SEQU	
TIMECODE	

TOUCH_BTN

VIEW

VIEWBTN

DMX

Classification : object keyword

NOT IMPLEMENTED YET.

DMX is accessing directly a DMX address.

DMX_BTN

Classification : object keyword

A DMX_BTN (dmx button) is a remote function triggert by incoming DMX signals.
The DMX_BTN simulates an executor keypress, therefore it is working only in combination with an assigned executor. DMX_BTNs can be seen under TOOLS / REMOTE DMX menu.

Calling a DMX_BTN manually:
DMX_BTN X ENTER

Linking a DMX_BTN to an executor:
STORE DMX_BTN X EXEC/FADEREBUTTON1/2/3 Y.Z ENTER
Using EXEC in this command will always link the remote to the middle executor button.

X must be in the range from 1 to 96.

EDIT

Classification : operational keyword

a) Simulating a right-mouse-click for editing an input field or a cell in a grid:

EDIT (use touchscreen to click somewhere) or

EDIT (left-mouse-click somewhere)

b) Starting EDIT / UPDATE procedure:

The whole procedure works as follows:

- EDIT object ENTER
  Only one object can be edited at one time. If the edit / update procedure is still running for another object, you will be asked to update the old one first.
- Programmer is cleared, and the values and selection of the object is loaded into the programmer.
- All titles of fixture and channel sheet will show the name of the "edit object".
- Change values and selection in the programmer as you want.
- If you changed something, UPDATE starts flashing.
- Hit UPDATE. You will be asked for a confirmation and then changed values and selection is stored back into the object.
- ESC will quit the EDIT / UPDATE procedure without updating the object at any time.

Objects that can be edited in this way are:

Syntax , start with EDIT ...	Comment
CUE ENTER	Edit active cue of default executor
[CUE] X ENTER	Edit cue X of default executor
CUE X SEQUENCE Y ENTER	
CUE X EXEC Y.Z ENTER	
CUE X (hit executor)	
SEQUENCE X ENTER or hit button in sequence pool window	Will edit first cue of sequence X

GROUP X ENTER or hit button in group pool window	Although a group has no values, the selection can be edited.
PRESET X ENTER or hit preset type in preset control bar of fixture sheet.	Will edit first non-empty preset of type X
PRESET X.Y ENTER or hit button in preset pool window	

c) Continue EDIT / UPDATE procedure with NEXT / PREVIOUS object:

EDIT NEXT [ENTER]
EDIT PREVIOUS [ENTER]
If you use the NEXT and PREVIOUS hard-keys, ENTER is not necessary.
Next and previous will continue edit/update with the next/previous non-empty object in the context of the current "edit object".
Examples:

- EDIT PRESET 1 ENTER. Starts edit/update for first non-empty PAN/TILT preset.
  EDIT NEXT goes on to the next non-empty PAN/TILT preset.
- EDIT SEQUENCE 1 ENTER. Starts edit/update for first cue.
  EDIT NEXT goes on to second cue.

Together with the HIGHLITE function, EDIT NEXT is probably the most powerful tool to check your stage presets or things like that.

d) Opening an edit screen:

Some objects can not be edited in the programmer. They have edit screens to manipulate them. Only one edit menu for only object can be open at one time. If you open an edit menu for an object, all other edit menus will close. Edit menus can be closed with the ESC button.

EDIT EFFECT X ENTER	or	EDIT (hit button in effect pool)
EDIT EXEC X.Y ENTER	or	EDIT (hit executor)
EDIT FORM X ENTER	or	EDIT (hit button in form pool)
EDIT MACRO X ENTER	or	EDIT (hit button in macro pool)
EDIT TIMECODE X ENTER	or	EDIT (hit button in timecode pool)

EFFECT

Classification : object keyword

a) as starting keyword:

EFFECT ENTER
EFFECT becomes the DEFAULT KEYWORD.

EFFECT (range list) ENTER
Start effects in range list.

Effect numbers in the range list must be in the interval [1 ... 999].

Effects are numbered in a certain way:

Range	Meaning
1 ... upwards	User created effects
899 ... downwards	Automatic created effects used by cuelists
900 ... upwards	Temporary effects, created from preset effects. These effects are not visible in pools.

c) as target for the following operational keywords:

ASSIGN	Assign an effect to an executor
COPY	Copy one effect to another
DELETE	Delete an effect
EDIT	Open edit menu for effect
IF	Deselect devices that are not included in effect
IFOUTPUT	Select devices that have stage output from the effect

INSERT/MOVE Change visible number of effect

LABEL Change name of effect

c) as target for the following executing commands:

GO Run forward, start with fade in

GO- Run backwards, start with fade in

>>> Run forward, no fade in

<<< Run backwards, no fade in

PAUSE Pause, stand still

OFF Switch off, fading out

ESC

Classification : immediate keyword

ESC (Escape) will progressively perform the following actions:

a) Is there something in the command line ? Yes -> clear commandline !

b) Is edit/update procedure running ? Yes -> cancel edit update

c) Is there an open window or a message box ? Yes -> close it !

d) Is there an edit menu open ? Yes -> close it !

EVEN

Classification : immediate keyword

EVEN is creating a sub-selection from the current selection.

If you have selected 10 fixtures and the say **EVEN**, only the 2nd, 4th,6th,8th and 10th fixture in this selection stays "really selected". The others become "a little bit selected", waiting to be fully selected again by the **ALL** command.

EXEC

Classification : object keyword

Format	Meaning
EXEC X [THRU [Y]]	Executors X to Y of current page
EXEC P.X [THRU [Q.Y]]	Executors X of page P to exec Y of page Q
EXEC X [THRU [Y]] PAGE P [THRU [Q]]	Executor X to Y of page P to Q

- Executor number X/Y must be in the range of [1 .. 60] where

[1..20] is adressing the motorized fader executors and

[21 .. 60] is adressing the button executors.

- Page numbers P/Q must be in the range of [1 .. 64].

a) as starting keyword:

EXEC ENTER
EXEC becomes the DEFAULT KEYWORD.

EXEC (range list) ENTER
Select devices included in objects to given executors.

EXEC (range list) AT ... (see AT)
Apply values to devices included in objects assigned to given executors.

a) as target for the following operational commands:

ASSIGN	SEQUENCE,GROUP and EFFECT objects can be assigned with the command line to an executor. EXECUTING COMMANDS can be assigned with the command line to an executor´s button. For fader executors, the keyword EXEC is specifying the middle button.
COPY	Copy one executor to another
DELETE	Delete an executor. This does not destroy the object that is assigned to the executor.
EDIT	Start to edit the object that is assigned to the executor.
IF	Deselect devices which are not part of executor´s object´s selection.
IFOUTPUT	Select devices which have stage output from this executor
INVERT	Invert current selection by the selection of executor´s object.
LABEL	Change name of executor´s object.
MOVE	Move executor to another position
PREVIEW	Preview executors object. If the object is a sequence, and the executor is running, the next cue will be previewed.

b) as target for ALL executing commands.

Please look at **9.3.1 Executing Keywords** for a summary or look at those keywords for details.

FADE

Classification : helping keyword

a) With executing keywords and executors
(Executing keyword) (Executor List) FADE X.X ENTER
The execution command is performed on all listed executors with a fade overwrite of X.X seconds. Does not work with PAUSE or flashing commands.

b) Giving individual fade times to fixtures or channels:
[Selection] AT FADE X.X [TRHU Y.Y] ENTER
Individual fades for the feature shown in the presetbar will be set to X.X seconds.
If no selection is given, the current selection is used.
Please note that the given fade may be a range. In this case, fades will be aligned over the given selection.
The given fades can be signed, which will result in relative changes of individual fades.
Giving individual fades can be combined with giving individual delays and values into one AT command.

c) Clearing individual fades:
[SELECTION] AT FADE ENTER
Works very much like b), but no value for the fade is given.

d) Setting default in & outfade:
(No selection present) FADE X.X ENTER
The next cue will be stored with X.X seconds basic fade and outfade for all non-snap channels.

e) As in & outfade when storing a cue:
STORE (List of Cues) FADE X.Y ENTER
The given cues will be stored with a basic fade and outfade of X.Y seconds for all non-snap channels.

f) Switching to fade display mode:
FADE ENTER
All sheets wich are set to AUTO display mode, will display fades instead of values. This effect is only temporary. All sheets will switch back to value mode upon ending of the next command line operation.

FADER

Classification : object keyword

Format	Meaning
FADER X [THRU [Y]]	Fader X to Y of current page
FADER P.X [THRU [Q.Y]]	Fader X of page P to fader Y of page Q
FADER X [THRU [Y]] PAGE P [THRU [Q]]	Fader X to Y of page P to Q

- Fader number X/Y must be in the range of [1 .. 20]
- Page numbers P/Q must be in the range of [1 .. 64].

Only one command is implemented for the fader keyword:

FADER (list of faders) AT (value list) [ENTER]

This command will set the motorized faders to the given values.

FADERBUTTON1

Classification : object keyword

The same as EXEC, but in case of ASSIGNMENTS it is excplicitely pointing to the MIDDLE button.

FADERBUTTON2

Classification : object keyword

The same as EXEC, but in case of ASSIGNMENTS it is excplicitely pointing to the LOWER button.

FADERBUTTON3

Classification : object keyword

The same as EXEC, but in case of ASSIGNMENTS it is excplicitely pointing to the UPPER button.

FEATURE

Classification : object keyword

NOT IMPLEMENTED YET.

FEATURE is accessing a FEATURE inside a FIXTURE, like PAN or IRIS.

FIX

Classification : executing keyword

a) **As starting keyword**, it is used to fix / unfix **EXECUTORS**. A fixed executor is physically present on all pages.

FIX (executor list) [ENTER]

b) In an assign command, this function can be put on an executor button (see ASSIGN).

FIXTURE

Classification : object keyword

a) as starting keyword:

FIXTURE ENTER
FIXTURE becomes the DEFAULT KEYWORD.

FIXTURE (range list) ENTER
Select fixtures in range list.

FIXTURE (range list) AT ... (see AT)
Apply values to fixtures in range list.

Fixture numbers in the range list must be in the interval [1 ... 9999].

b) as target for the following executing commands:

ON	activate all feature values in programmer.
OFF	deactivate all feature values in programmer and deselect fixture.
PAUSE	PARK all features of fixture.
GO	UNPARK all features of fixture.

FLASH_DOWN

Classification : executing keyword

a) As starting keyword, every executor that follows after FLASH_DOWN is starting a black out.

FLASH_DOWN (executor list) [ENTER]

b) As starting keyword combined with **UNPRESS**, every executor that follows after FLASH_DOWN is ending a black out.

FLASH_DOWN (executor list) UNPRESS [ENTER]

a) In an assign command, this function can **NOT** be used. You have to use the Assign menu for putting it on an executor button. It is simply called **FLASH** there.

Note: It is nearly impossible to use this command by typing it into the command line. Rather use it when it is assigned to a button !

FLASH_DOWN_OFF

Classification : executing keyword

Same as FLASH_DOWN ... UNPRESS.
Please look at the FLASH_DOWN command description.

FLASH_UP

Classification : executing keyword

a) As starting keyword, every executor that follows after FLASH_UP is starting a full flash.

FLASH_UP (executor list) [ENTER]

b) As starting keyword combined with **UNPRESS**, every executor that follows after FLASH_UP is ending a full flash.

FLASH_UP (executor list) UNPRESS [ENTER]

c) In an assign command, this function can **NOT** be used. You have to use the Assign menu for putting it on an executor button. It is simply called **OUT** there.

Note: It is nearly impossible to use this command by typing it into the command line. Rather use it when it is assigned to a button !

FLASH_UP_OFF

Classification : executing keyword

Same as FLASH_UP ... UNPRESS.
Please look at the FLASH_UP command description.

FORM

Classification : object keyword

a) as starting keyword it has no function.

FORM (range list) ENTER

Form numbers in the range list must be in the interval [1 ... 999].

b) as target for the following commands:

COPY	Copy one form to another
DELETE	Delete a form
EDIT	Open edit menu for form
INSERT/MOVE	Change visible number of form.

FULL

Classification : helping keyword

Full is an alias for 100% dimmer value (open).

a) As starting keyword, it is immediate, opening all dimmers of the current selection:

FULL

b) After the AT command in value ranges like:

... AT FULL ENTER

... AT 0 THRU FULL ENTER

GO

Classification : executing keyword

a) As starting keyword, every object that follows after the GO will try to **go forward** one step.

GO (target object list) [FADE X] [DELAY Y] [ENTER]

If fade or delay are given, they overwrite the pre-programmed times.

Target type	Operation
EXEC	Go forward one step
EFFECT	Start running forward
TIMECODE	Start playing forward
PAGE	Does GO on all its executors.
SPEEDMASTER (executor assigned to a speed master)	Does GO on all programs using this speed master
SUBMASTER	Unpark all channels involved in this group.
CHANNEL, FIXTURE, GROUP	Unpark devices.
PRESET X (Preset Type)	Unpark all channels of current selection of that preset type.

b) In an assign command, this function can be put on an executor button (see ASSIGN).

GO-

Classification : executing keyword

a) As starting keyword, every object that follows after the GO will try to **go backwards** one step.

GO- (target object list) [FADE X] [DELAY Y] [ENTER]

If fade or delay are given, they overwrite the default GO- times.

The default GO- times can be changed in the SETUP / DEFAULTS menu.

Target type	Operation
EXEC	Go backwards one step
EFFECT	Start running backwards
PAGE	Does GO- on all its executors.
SPEEDMASTER (executor assigned to a speed master)	Does GO- on all programs using this speed master

b) In an assign command, this function can be put on an executor button (see ASSIGN).

GOTO

Classification : executing keyword

a) As starting keyword, every executor that follows after the GOTO will try to **go directly to a given step.**

GOTO [CUE] [W] [EXEC X] [FADE Y] [DELAY Z] [ENTER]

Giving the keyword CUE is optional.
If W (cue number) is not given, you will be prompted for it.
If executor is not given, default executor will be used.
If fade or delay are given, they overwrite the default GOTO times.
The default GOTO times can be changed in the SETUP / DEFAULTS menu.

b) In an assign command, this function can be put on an executor button (see ASSIGN).
In fact you will end up with an LOAD assigned to the executor button, because it has to ask for the cue anyway.

GROUP

Classification : object keyword

a) as starting keyword:

GROUP ENTER
GROUP becomes the DEFAULT KEYWORD.

GROUP (range list) ENTER
Select groups in range list.

GROUP (range list) AT ... (see AT)
Apply values to groups in range list.

Group numbers in the range list must be in the interval [1 ... 999].

b) as target for the following executing commands:

ON	activate devices contained in group.
OFF	deactivate and deselect devices contained in group.
PAUSE	PARK all devices of group.
GO	UNPARK all devices of group.

IF

Classification : helping keyword

IF is performing a logical AND within selections. It is never enlarging the current selection. It leaves only those devices selected which are included in to different selections:

Assuming that we have two groups (we will use real names to make it clearer):
PAR64 includes ALL PAR64 lamps
FRONT_TRUSS includes ALL lamps on the front truss.

PAR64 IF FRONT_TRUSS ENTER will therefore select all PAR64 which are on the front truss !

General Syntax:
[(selection1)] IF (selection2) ENTER
If selection1 is not given, the current selection will be used.

IFOUTPUT

Classification : operational keyword

IFOUTPUT is selecting devices depending on the current stage output.

General syntax:
IFOUTPUT (object list) [ENTER]
If the object list is a hit on an executor´s button, or a click into an object pool window, ENTER is not needed.

Examples:

IFOUTPUT EXEC 1 ENTER All devices which have stage output from executor 1 will be selected.

IFOUTPUT PRESET 1.1 ENTER All devices which have the preset 1.1 active on stage will become selected. Very nice for selecting all fixtures that have a "blue star" currently on stage.

IFOUTPUT (selection) ENTER All devices of the given selection that have a stage output at the moment become selected.

IFOUTPUT CUE/SEQUENCE/EFFECT works accordingly.

INSERT

Classification : operational keyword

INSERT (source objects) AT (destination) [ENTER]

Example: INSERT GROUP 10 THRU 15 + 20 AT 1 ENTER

Insert is working ONLY with SORTABLE objects.Sortable objects are:
PRESET, GROUP,MACRO,VIEW,EFFECT,FORM,TIMECODE,SEQUENCE

Insert will try to make sufficient free space at the given destination by moving away non-empty objects.

INVERT

Classification : operational keyword

INVERT (selection) [ENTER]

INVERT is inverting the selected status of devices.

Example1:

Fixtures 1 through 5 are already selected.
INVERT FIXTURE 1 THRU 10 ENTER
Fixtures 6 through 10 are selected.

Example2:

All even fixtures of GROUP X are already selected.
INVERT GROUP X ENTER
All odd fixtures of GROUP X are selected.

Special case:

INVERT ENTER
The selected status of all devices that have ACTIVE channels in the programmer is inverted.

LABEL

Classification : operational keyword

LABEL (object list) ["NEW NAME"] ENTER

All objects in the object list will be renamed to "NEW NAME".

Directly entering the new name is only possible with the PC keyboard.
If the name is not given directly within the command, you will be prompted for it.
If more than one object is to be labeled, the given name will be enumerated for every object:
LABEL PRESET 4.1 THRU "COLOUR1" ENTER
Preset 4.1 is named "COLOUR1"
Preset 4.2 is named "COLOUR2" and so on.

Please note that executors do not have a name of their own. Instead they are showing the name of the object assigned to it. In this way, labeling of an executor does not change the name of the executor, but of its object. Labeling of executors is fastly done:
LABEL hit executor, enter new name.

Of course you can not change the name of an empty executor.

LEARN

Classification : executing keyword

a) As starting keyword, every executor that follows after LEARN will try to learn a new speed.

LEARN (executor list) ENTER

b) In an assign command, this function can be put on an executor button (see ASSIGN).

The LEARN function is working with CHASERS (a sequence assigned to an executor in chaser mode) and with EFFECTS (regardless if they are assigned to an executor or not).
Note: It makes absolutely no sense to use this function by typing it into the command line. The LEARN function will calculate the timing between 2 to 4 LEARN commands, average the result, and adapt its speed to that.

LOAD

Classification : executing keyword

a) As starting keyword, every executor that follows after the LOAD will **go to a given step upon the next MANUAL GO command.**

LOAD [CUE] [W] [EXEC X] [ENTER]

Giving the keyword CUE is optional.
If W (cue number) is not given, you will be prompted for it.
If executor is not given, default executor will be used.

b) In an assign command, this function can be put on an executor button (see ASSIGN).

MACRO

Classification : object keyword

a) as starting keyword , given macros will be executed.

MACRO (range list) ENTER

Macro numbers in the range list must be in the interval [1 ... 999].

b) as target for the following commands:

ASSIGN	A macro can be assigned to a VIEWBTN
COPY	Copy one macro to another
DELETE	Delete a macro
EDIT	Open edit menu for macro
INSERT/MOVE	Change visible number of macro
STORE	Start to record a macro from live actions. Macro recoring is indicated by a flashing macro button. Macro recording is stopped with the command STORE MACRO ENTER..

Macros can be timed.
A timed macro plays back with the same timing as it was recorded.
Non-timed macros execute completely at once.

MIDI_BTN

Classification : object keyword

A MIDI_BTN (midi button) is a remote function triggert by incoming midi note on/note off signals.

The MIDI_BTN simulates an executor keypress, therefore it is working only in combination with an assigned executor. MIDI_BTNs can be seen under TOOLS / REMOTE MIDI menu.

Calling a MIDI_BTN manually:
MIDI_BTN X ENTER

Linking a MIDI_BTN to an executor:
STORE MIDI_BTN X EXEC/FADEREBUTTON1/2/3 Y.Z ENTER
Using EXEC in this command will always link the remote to the middle executor button.

X must be in the range from 1 to 72.

MOVE

Classification : operational keyword

MOVE (source objects) AT (destination objects) [ENTER]

Source objects : a range list of objects which are all of type X.
Destination objects: a range list of objects which are all of type Y

Object types X and Y must be equal or compatible (see COPY)

If object type is sortable, **MOVE object_a AT object_b** will exchange objects.
If object type in not sortable, object_b will be overwritten with object_a, then the original object_a will be deleted.

Sortable objects are:
PRESET, GROUP,MACRO,VIEW,EFFECT,FORM,TIMECODE,SEQUENCE

Nonsortable objects are:
EXEC,CUE,PAGE,VIEWBTN,DMXBTN,MIDIBTN,TOUCHBTN

The following objects can not be moved:
CHANNEL,FIXTURE,DMX,FEATURE,FADER

NEXT

Classification : immediate keyword

a) Create a subselection from the current selection:
If you have selected more than one fixture and then say **NEXT**, only the first fixture stays "really selected". The others become "a little bit selected".
The next time you say **NEXT**, only the 2nd fixture within the current selection is "really selected" and so on. The **ALL** command will clear this subselection.

b) Continue EDIT / UPDATE procedure with NEXT object:
See **EDIT**.

c) Cursor Right in open dialog windows.
In all temporary dialog windows and message boxes, you can use the **NEXT** key to move the input focus in that window to the right. Together with **PREVIOUS** and **ENTER** you can , for example , choose the appropriate answer in a message box.

ODD

Classification : immediate keyword

ODD is creating a sub-selection from the current selection.

If you have selected 10 fixtures and the say **ODD**, only the 1st , 3th,5th,7th and 9th fixture in this selection stays "really selected". The others become "a little bit selected", waiting to be fully selected again by the **ALL** command.

OFF

Classification : executing keyword

a) As starting keyword, every object that follows after the OFF will be switched OFF.

OFF (target object list) [FADE X] [DELAY Y] [ENTER]

If fade or delay are given, they overwrite the default OFF time.
The default OFF times can be changed in the SETUP / DEFAULTS menu.

Target type	Operation
EXEC	Switch off executor
EFFECT	Switch off effect (fading out)
TIMECODE	Stop timedode show
PAGE	Does OFF on all its executors.
SPEEDMASTER (executor assigned to a speed master)	Does OFF on all programs using this speed master
SUBMASTER	"Knock out" all channels involved in this group.

CHANNEL,FIXTURE and GROUP	"Knock out" all given devices.
PRESET X (Preset Type)	"Knock out" all channels of current selection of that preset type.

"Knock out" means to clear the programmer completely for a channel.

b) In an assign command, this function can be put on an executor button (see ASSIGN).

ON

Classification : executing keyword

a) As starting keyword, every object that follows after the ON will be switched ON without changing the current step.

ON (target object list) [FADE X] [DELAY Y] [ENTER]

If fade or delay are given, they overwrite the pre-programmed times.

Target type	Operation
EXEC	Switch on executor
EFFECT	Switch on effect (fading in in last direction)
PAGE	Does On on all its executors.
SPEEDMASTER (executor assigned to a speed master)	Does On on all programs using this speed master
SUBMASTER	"Knock in" all channels involved in this group.
CHANNEL,FIXTURE and GROUP	"Knock in" all given devices.
PRESET X (Preset Type)	"Knock in" all channels of current selection of that preset type.

"Knock in" means to activate the programmer for a channel with its current value. This function can also be used to make "snapshots" of running programs.

b) In an assign command, this function can be put on an executor button (see ASSIGN).

OOPS

Classification : immediate keyword

OOPS , I made a mistake ! Undo !

OOPS is progressively performing:
- If the command line is not empty, a backspace in the command line.
- If the undo stack is not empty, an undo operation.

Undos are created for programming actions only like storing a cue.
You can not do an undo for playback actions like starting an executor.

The undo stack contains the last 10 programming operations, therefore you can go back exactly 10 undos. Nevertheless a command like DELETE SEQU 1 THRU 10 (delete 10 sequences) will create only one undo on the stack.

Working with undos can give you security during your programming, but for performance reasons it can be switched off (see SETUP / UNDO menu) .

PAGE

Classification : object keyword

a) As staring keyword, the given page will become the current page.

PAGE T.X ENTER

T Type of page in range [1..3]
Type 1 means Dimmer pages
Type 2 means Fader executor pages
Type 3 means Button executor pages

X For dimmer pages in range [1.. amount dimmers divided by 20]
For executor pages in range [1..64]

PAGE X ENTER Will select fader and button executor page together

b) As target for the following operational commands:

COPY	Copy one page to another
DELETE	Delete a page
MOVE	Move a page to a different location

c) As target for all execution commands.
The page will redirect the given commands to all its executors.

PAUSE

Classification : executing keyword

a) As starting keyword, every object that follows after the PAUSE will be paused.

PAUSE (target object list) [ENTER]

Target type	Operation
EXEC	Pause executor
EFFECT	Pause effect
PAGE	Does Pause on all its executors.
SPEEDMASTER (executor assigned to a speed master)	Does Pause on all programs using this speed master
SUBMASTER	"Park" all channels involved in this group.
CHANNEL,FIXTURE and GROUP	"Park" all given devices.
PRESET X (Preset Type)	"Park" all channels of current selection of that preset type.

"Park" means to freeze the output for a channel with its current value. Parked channels are shown with a bright blue background in the sheets. Although a channel is parked, it can still be used normally for programming purposes.

b) In an assign command, this function can be put on an executor button (see ASSIGN).

PRESET

Classification : object keyword

a) as starting keyword:

PRESET ENTER
PRESET becomes the DEFAULT KEYWORD.

PRESET T.X ENTER
Call Preset X of type T.

X Preset number in range [1...999]
T Preset type in range [1...9]

b) as target for the following operational commands:

COPY	Copy one preset to another
DELETE	Delete a preset
EDIT	Start edit / update procedure for preset
IF	Deselect devices which are not part of the preset.
IFOUTPUT	Search for stage output of preset
LABEL	Change name of preset
MOVE/INSERT	Move preset to another position

PREVIEW

Classification : operational keyword

PREVIEW (object) [ENTER]

Only one object can be previewed at one time.
Preview will show the content of the object in the programmer without creating stage output (blind). The original content of the programmer is not destroyed.

Preview will be indicated by all sheets, showing PREVIEW in their titles.

Preview is cancelled by the next command line operation.

PREVIOUS

Classification : immediate keyword

a) Create a subselection from the current selection:
If you have selected more than one fixture and then say PREVIOUS, only the last fixture of the selection stays "really selected". The others become "a little bit selected". The next time you say PREVIOUS, only the 2nd last fixture within the current selection is "really selected" and so on. The ALL command will clear this subselection.

b) Continue EDIT / UPDATE procedure with PREVIOUS object:
See EDIT.

c) Cursor Left in open dialog windows.
In all temporary dialog windows and message boxes, you can use the PREVIOUS key to move the input focus in that window to the left. Together with NEXT and ENTER you can , for example , choose the appropriate answer in a message box.

SELECT

Classification : executing keyword

a) As starting keyword, it is used to select the DEFAULT EXECUTOR.

SELECT hit executor
SELECT EXEC X ENTER

The default executor can be identified by its green title in the executor mini displays.
The default executor is reacting to the DEF_GO,DEF_GO- and DEF_PAUSE commands and to their physical counterpart, the three big yellow buttons.
During programming it can be very convenient to make the executor you are working on the default one. Many commands assume to work with the default executor if no other executor is given.
b) In an assign command, this function can be put on an executor button (see ASSIGN).

Pushing this button will select the executor of the button as default executor.

SEQU

Classification : object keyword

a) as starting keyword:

SEQU ENTER
SEQU becomes the DEFAULT KEYWORD.

SEQU (range list) ENTER

Select devices included in sequences.

Sequence numbers must be in the range of [1...999]

SEQU (range list) AT ... (see AT)
Apply values to devices included in sequences.

b) as target for the following operational commands:

COPY	Copy one sequence to another
DELETE	Delete a sequence,also unassignes executors
EDIT	Opens edit menu for sequence
IF	Deselect devices which are not part of the sequence.

IFOUTPUT	Search for stage output of sequence
INVERT	Invert selection of sequence
LABEL	Change name of sequence
MOVE	Move sequence to another position

c) as target for the following executing commands:

ON	"Knock in" all devices contained in sequence.
OFF	"Knock out" all devices contained in sequence.
PAUSE	PARK all devices contained in sequence.
GO	UNPARK all devices contained in sequence.

STORE

Classification : operational keyword

STORE (object list) [ENTER]

All objects in the object list must be of the same type.
If no object is given, a new cue is stored into the default executor.

If the destination of the store command is not empty, you will be asked for confirmation.
In case of storing over existing cues, you will furthermore be asked about the desired store mode like merge or overwrite.

If you start storing by pressing the STORE hard key, a temporary window will appear.
The settings in this window affect the way , the store command is handled.
Defaults for these store options can be found in SETUP / DEFAULTS menu.

SWOP

Classification : executing keyword

a) As starting keyword, every executor that follows after SWOP is starting a full flash, doing a BLACKOUT on all other executors (if they are not protected againts swop).

SWOP (executor list) [ENTER]

b) As starting keyword combined with **UNPRESS**, every executor that follows after SWOP is ending its full flash, bringing up again oll other executors.

SWOP (executor list) UNPRESS [ENTER]

c) In an assign command, this function can **NOT** be used. You have to use the Assign menu for putting it on an executor´s button.

Note: It is nearly impossible to use this command by typing it into the command line. Rather use it when it is assigned to a button!

SWOP_OFF

Classification : executing keyword
Same as **SWOP ... UNPRESS.**

Please look at the **SWOP** command description.

TEMP

Classification : executing keyword

a) As starting keyword, every executor that follows after TEMP is performing a GO if it wasn´t running..

TEMP (executor list) [ENTER]

b) As starting keyword combined with **UNPRESS**, every executor that follows after TEMP is switched OFF.

TEMP (executor list) UNPRESS [ENTER]

c) In an assign command, this function can be assigned to an executor´s button.

ASSIGN TEMP (executor list) ENTER

Note: It is nearly impossible to use this command by typing it into the command line. Rather use it when it is assigned to a button ! TEMP does not really exist as a function. It is always translated into a pair of GO/OFF commands. You will see that if you record TEMP in a timecode show.

THRU

Classification : helping keyword

THRU can only be used within other commands to create ranges.

X THRU Y	Range from X to Y
X THRU	Range from X to the end
THRU Y	Range from the beginning to Y
THRU	Range from the beginning up to the end.

The meaning of "beginning" and "end" depend on the context like
FIXTURE 10 THRU ENTER will select all fixtures from 10 upwards.

Thru can of course also be used to create ranges of values like

CHANNEL 1 THRU 10 AT 0 THRU FULL ENTER
or
CHANNEL 1 THRU 10 AT FULL FADE 1 DELAY 0 THRU 5 ENTER

TIMECODE

Classification : object keyword

a) as starting keyword:

TIMECODE ENTER
TIMECODE becomes the DEFAULT KEYWORD.

TIMECODE (range list) ENTER
Does nothing.
Timercode numbers in the range list must be in the interval [1 ... 200].

b) as target for the following operational keywords:

COPY	Copy one timecode show to another
DELETE	Delete a timecode show
EDIT	Open edit menu for timecode show
INSERT/MOVE	Change visible number of timecode show
LABEL	Change name of timecode show

c) as target for the following executing commands:

GO	Start playback
PAUSE	Pause playback, keep output
OFF	Switch off, release output
>>	Jump forward to next breakpoint in show
<<	Jump backwards to last breakpoint in show

Please look at the separate timecode manual for details about dealing with timecode.

TOGGLE

Classification : executing keyword

a) As starting keyword, every executor that follows after TOGGLE is performing a GO if it wasn´t running or an OFF if it was running.

TOGGLE (executor list) [ENTER]

b) In an assign command, this function can be assigned to an executor´s button.

ASSIGN TOGGLE (executor list) ENTER

TOP

Classification : executing keyword

a) As starting keyword, every executor that follows after TOP is performing a GOTO FIRST STEP.

TOP (executor list) [ENTER]

b) In an assign command, this function can be assigned to an executor´s button.

ASSIGN TOP (executor list) ENTER

TOUCH_BTN

Classification : object keyword

A TOUCH_BTN (touch button) is a remote function triggert by incoming 0-10V signals.
The TOUCH_BTN simulates an executor keypress, therefore it is working only in combination with an assigned executor. TOUCH_BTNs can be seen under TOOLS / REMOTE TOUCH menu.

Calling a TOUCH_BTN manually:
TOUCH_BTN X ENTER

Linking a TOUCH_BTN to an executor:
STORE TOUCH_BTN X EXEC/FADEREBUTTON1/2/3 Y.Z ENTER
Using EXEC in this command will always link the remote to the middle executor button.

X must be in the range from 1 to 16.

UNPRESS

Classification : helping keyword

UNPRESS is used only in combination with functions of executor´s buttons that cause an action upon unpress. These functions are FLASH_UP,FLASH_DOWN,SWOP,and TEMP.
Please look at these commands for details about UNPRESS.

UPDATE

Classification : operational keyword

UPDATE does the following things, sorted by priority:

a) If the UPDATE dialog is open, it closes the UPDATE dialog.

b) If the EDIT / UPDATE procedure is active, the edited object is updated, and EDIT / UPDATE procedure is finished.

c) It loads the UPDATE dialog , where you can update changed PRESETS and CUES.

VALUE

Classification : immediate keyword

VALUE has no other meaning than switching back to value mode if desk is in a time mode like FADE or DELAY.

VIEW

Classification : object keyword

a) as starting keyword , given views will be called.

VIEW (range list) ENTER

View numbers in the range list must be in the interval [1 ... 999].

b) as target for the following commands:

ASSIGN	A view can be assigned to a VIEWBTN
COPY	Copy one view to another
DELETE	Delete a view
INSERT/MOVE	Change visible number of view
STORE	Store a view. You will be asked for the screens that should be contained in the view.

Views can store and restore the window arrangement on the screens of your desk.

- A View can contain one screen or multiple screens.
- Views that contain single screens can be called back also on other screens.
- Views that contain multiple screens will be called back on the original screens.
- Views that contain single screens from external monitors can not be called back on the build in system screens (because of higher resolution).
- Views which are called by the command line (and not by the push of a VIEWBTN) are called back on the original screens.

VIEWBTN

Classification : object keyword

a) as starting keyword, given view buttons will be called.

VIEWBTN (range list) ENTER

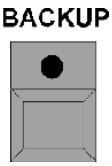
Viewbutton numbers in the range list must be in the interval [1..30]

Each screen has 6 view buttons. 3 build in and 2 external monitors make a total of 30 view buttons.

b) as target for the following commands:

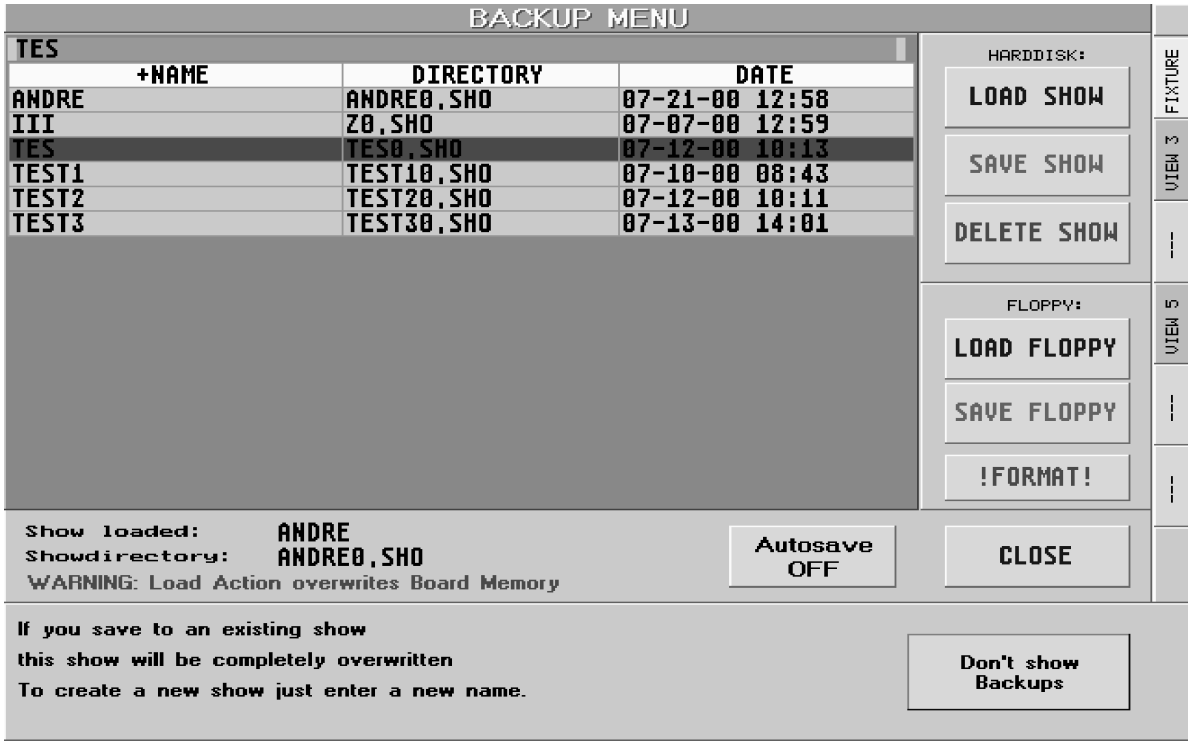
ASSIGN	Assign a view or a macro to a view button. Syntax is:
	ASSIGN VIEW X VIEWBTN Y ENTER
	ASSIGN MACRO X VIEWBTN Y ENTER
COPY	Copy one view button to another
DELETE	Delete (Empty) a view button.
MOVE	Move one view button to another
STORE	STORE a view and assign it to the view button.

10 Saving and Loading a Show



By pressing the BACKUP button, you will open the Backup menu.

Pressing the BACKUP button twice will save the current Show and makes a backup (➡ below).



The processes of saving and loading shows is being organized in the BACKUP menu. The current SHOW (currently loaded Show) can be named and saved on the internal harddisk or additionally on floppy disk.

With the AUTOSAVE button, you can set an automatic save according to the time displayed on the button.

Furthermore, a BACKUP of the Show will be made with each saving operation (max. 10). These backups can be used to restore previously saved Shows. You can display the backups using the SHOW BACKUP button.

10.1 Saving the Current Show on the internal harddisk

Proceed with a left mouse click on the title bar (Edit line). Name the show using the keyboard.

Continue with a left mouse click on the SAVE SHOW button. The SAVING ACTSHOW/COPYING ACTSHOW window will appear. The SHOW will be saved as soon as this window has automatically closed.

10.2 Loading a Show from the internal harddisk

Click on the desired SHOW in the list (indicated by its red line). In the top line, the name of the Show will appear. Press on the LOAD SHOW button.

The QUESTION window (save the current show first) with the following options will open:

YES To save the current Show before loading the new one.
NO To load the new Show without saving the current one.
CANCEL To abort this process.

The show will be loaded and the console will automatically reboot.

10.3 Loading an Empty Show

To create a completely new Show, first click on the top line and enter a name that had not been used for other Shows. Press the LOAD SHOW button. The QUESTION window (save the actual show first) will open.

Pressing the YES button will save the current Show.
Pressing the NO button will discard the current Show.

The new show will be loaded and the console will automatically reboot.

Additionally, you can save an „empty" Show to hard disk or floppy so that you can use them later when needed. This way, you can also transfer demo shows, standard settings, etc. to others.

10.4 Deleting the Current Show

The currently loaded Show can not be deleted! In order to delete the currently loaded Show, you have to load another Show first.

10.5 Deleting a Show from the internal harddisk

In the list, make a left mouse click on the Show to be deleted (indicated by a red line). Press the DELETE SHOW button. The QUESTION window (delete the show first from harddisk) with the following options will open:

YES Will delete the selected Show.
NO Will abort the process.

The hard disk has a capacity of at least 2,000 Megabytes so that you can save lots of Shows to the *grandMA's* hard disk.

10.6 Saving the Current Show on floppy disk

All data necessary for the SHOW are being saved on floppy disk (even all Fixtures to be used in the show and all users with all settings for this show). Thus, you can transfer the whole show to another *grandMA* console or put the data to the archives.

Proceed with a left mouse click on title bar. Enter the name of the show via keyboard.

Continue with a left mouse click on the SAVE FLOPPY button. The SAVING ACTSHOW/COPYING ACTSHOW window will appear. After just a few seconds, the SAVING COMPRESSED SHOW window will open.

Insert an empty IBM/PC formatted 3,5" disk and remove the write protection (small tongue on the disk must be **closed**). Now press the OK button.

The show will be saved after the window has closed. This procedure might take a few minutes.

Remove the disk from the drive afterwards.

10.7 Loading a Show from floppy disk

Press the LOAD FLOPPY button. The window LOADING COMPRESSED SHOW will open. Insert the disk containing the show. Now press the OK button (might take a few minutes).

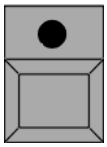
The show will be loaded and the console will automatically reboot.

Remove the disk from the drive afterwards.

TIP Please make sure to frequently save the current show on harddisk during the programming procedure. A back-up on floppy disk is always reasonable.

11 Software Update

SETUP



Open the SETUP menu with the SETUP button.

UPDATE SOFTWARE

Open the UPDATE menu by pressing the UPDATE SOFTWARE button. If this is not possible (e.g. an update had not been completed correctly), you can open the menu with the F4 key.

UPDATE:
DESK PROZESSOR 1.38
1: UPDATE DESK PROCESSOR FIRMWARE
2: UPDATE Grand MA MAIN PROGRAM *)
Version Info
UPDATE FIXTURE LIBRARY
*) CAUTION: This Action updates your system with new Software and may not be compatible with existing Showfiles
CLOSE

Do not update the *grandMA* before running a Show!

To update the *grandMA* software, insert the current UPDATE disk labeled "LAST DISK" and press the respective button.

1: UPDATE DESK PROCESSOR FIRMWARE:	Will update the program for the second built-in computer (Motorola). The current version is displayed above the button. Pressing this button will open a menu. There, you can either load the data for this update from floppy disk or the data on the HDD will be displayed and can be updated by selecting them.
2: UPDATE Grand MA MAIN PROGRAM:	Will update the "main program" (PC).
UPDATE FIXTURE LIBRARY:	Will delete and update the internal MA-FIXTURE library. Self-created Fixtures will be kept and not be overwritten.➠ **2.11.3 Updating the Fixtures Library**

Before changing disks, make sure that the green LED on the floppy disk drive is off. The Update procedure can take between 2 and 10 minutes. After updating the main program, it is necessary to reset the console.

All three UPDATES should be installed in the indicated sequence.

By pressing the button *VERSION INFO* you can find relevant information about the update (after update is completed)!

You can only download the update from our HOMEPAGE (www.malighting.de) using an IBM compatible PC. Then you **have to** unzip the files with the **original WINZip** program (www.winzip.com); proceed by copying this data on a 3.5" disk. The disk must not contain any data!

12 Utility Menu

You will need this menu, if the main program or the actual show is damaged due to a crash or some other error. For the *grandMA* light and ultra-light you need an external keyboard.

In the Utility Menu, you can load or delete an old grandMA operating system. You can also delete shows here. You can delete the current show (this show is automatically loaded upon power-up of the console). You can renew the Firmware for the second built-in Computer (Motorola) and you can also renew the grandMA operating system via disk.

During the Boot-up process you will see all loaded program segments (blue background) on the right TFT display. In order to access the Utility Menu you have to push any button as soon as the message:
??? TO ENTER UTILITY MENU PRESS ANY KEY ??? is displayed with red background during the boot-up process. The menu will open after approx. 10-20 seconds.

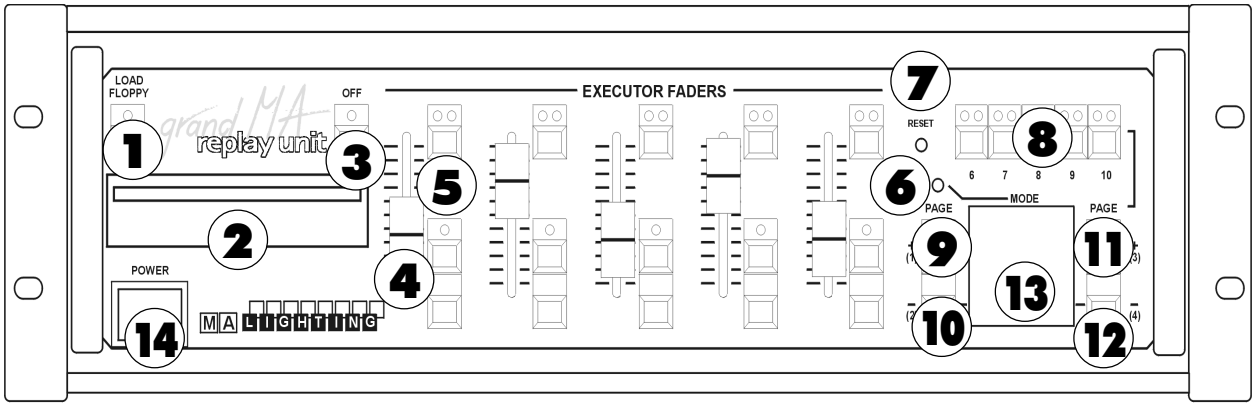
Press 1:	Restore grandMA operating system	If you press the „1" button on the keyboard, you will see a list with all systems existing on the harddisk. By pressing one of the displayed buttons (a, b, c...) the respective system will be installed. You have to confirm installation by pressing "o". As soon as the installation is completed, the display will show UPDATE DONE next to STATUS. You can start the console by pressing the "ESC" button two times.
Press 2:	Delete grandMA operating system	Upon every update, a safety copy of the system will be automatically created on harddisk. In order to delete an older system from harddisk, press „2" on the keyboard. You will see a list with all systems existing on the harddisk. By pressing one of the displayed buttons (a, b, c...) the respective system will be deleted. You have to confirm the delete process by pressing "o". After deletion is completed, the display will show DELETE DONE next to STATUS. You can start the console by pressing the "ESC" button two times.
Press 3:	Delete grandMA shows	Upon every update, a new folder for the shows will automatically be created on the harddisk. During every update, the console will save all old shows, converted to suite the new system software, in the youngest folder. From the time of the update, all new created shows will be automatically saved in this folder, too. In order to delete shows from an older system version from the harddisk, press „3" on the keyboard. You will see a list with all shows in all system versions existing on this harddisk. By pressing one of the displayed buttons (a, b, c...) the respective shows will be deleted. You have to confirm the delete process by pressing "o". After deletion is completed, the display will show DELETE DONE next to STATUS. You can start the console by pressing the "ESC" button two times.
Press 4:	Delete current show	If you press „4" on the keyboard, the current show (this show will be automatically loaded upon power-up of the console) will be deleted. You have to confirm the delete process by pressing "o". After the deletion is completed, the display will show DELETE DONE next to STATUS. You can start the console by pressing the "ESC" button two times.
Press 5:	Update firmware with display	If you press „5" on the keyboard, you can renew the Firmware for the second built-in Computer (Motorola). In order to update the software: insert the current update disk labeled „LAST DISK". You have to confirm the update process by pressing "o". As soon as the update is completed, the display will show UPDATE DONE next to STATUS. You can start the console by pressing the "ESC" button two times.
Press 6:	Update grandMA	In order to update the software: insert the current update disk labeled „LAST DISK". You have to confirm the update process by pressing "o". Shortly after, you will be asked for "DISK 1". Now insert this disk and confirm by pressing "o". The disk will be read (might take a little while). Following that, you will be asked for „DISK 2". Insert disk 2 and confirm again with "o" (this will take a little longer now). As soon as the update process is completed, the display shows UPDATE DONE, PLEASE REBOOT next to STATUS. Now please reboot the console by using the combination CTRL-ALT-DEL or the RESET button on the backside of the console.

13 Layout and Controls *grandMA* replay unit

13.1 Introduction

The *grandMA* Replay Unit is a small rack mount controller unit that performs nearly all of the functions of the Award winning *grandMA* console. At 19" x 17" x 5", it only requires a very small space, while offering 100% compatibility to the bigger consoles.

The *grandMA* Replay Unit is designed to perform as a stand-alone show controller on exhibitions, in theme parks or other venues. In conjunction with one of the *grandMA* consoles, it also becomes a most powerful backup system which can run a complete show in full tracking despite its reduced hardware.



1 Floppy Button

Fast loading of a show from floppy disk. This button complies with the following steps on the *grandMA*: "Backup-Load Floppy". If monitor and mouse are connected, you can follow the instructions in chapter ➡ **10.6** Saving or loading a SHOW. Without these, you would go ahead as follows: Confirm, if you wish to save the actual show on the internal harddisk in advance by pressing the page buttons / button no. 1 to 3.
Button no. 1: Save actual show on harddisk before loading show from floppy.
Button no. 2: Do not save on harddisk before loading show from floppy.
Button no. 3: Cancels the actual load task.
Without a floppy disk inserted, you will get an error message on the display. Confirm with button no. 1.
This procedure is also valid for many other "Pop Up menus" of the *grandMA*.

2 Floppy Drive

The floppy drive will take all 3.5" 1.44MB HD disks and will serve to save shows or single fixtures from the library.

3 Off Button

The "Off Button" has the same function as the "Off Button" of the *grandMA*. Together with the Executor Buttons or the appearing menu on the monitor, you can switch off active executors. You can switch off the executor by simultaneously pressing the "Off Button" and the respective "Executor Button". ➡ **5.6** OFF menu

4 Executor Fader

There are 5 Executor Faders available. These five faders correspond to the faders no. 1 to 5 on the *grandMA*. Faders no. 6 to 20 (Faders 6 to 10 on the *grandMA* light) are not available. This becomes especially important when programming the show on the *grandMA* and "running" the show afterwards with the Replay Unit. These faders are not motorized, so that the actual values have to be "grabbed" after switching pages. If the faders are not located at the actual value, the respective LEDs within the buttons will flash, until the value has been reached by moving the fader. Channel faders are not available.

5 Executor Fader Button

Three Executor Buttons are available for each Executor Fader (as on the *grandMA*). These 15 Executor Fader Buttons correspond with the Fader Buttons no. 1 to 5 on the *grandMA*. Fader Button no. 6 to 20 (Fader Button no. 6 to 10 on the *grandMA* light) are not available. This becomes especially important when programming the show on the *grandMA* and "running" the show afterwards with the Replay Unit.

6 Mode Button

Has no function yet. This button is being held for possible special functions to be activated later on.

7 Reset Button

This button stands for a "hard" reset. This button shall only be used in the non-probable case of a computer freeze. The same button is located once again on the rear panel. ➡ **1.8.1 Basics**

8 Executor Buttons

There are 5 Executor Buttons (no. 6 to 10) available (as on the *grandMA*). These buttons correspond with the Executor Buttons no. 21 to 25 on the *grandMA*. Buttons no. 26 to 40 (no. 16 to 20 on the *grandMA* light) are not available. This becomes especially important when programming the show on the *grandMA* and "running" the show afterwards on the Replay Unit.

9 Executor Fader Page Up / Button no. 1

This button has 2 functions.
Switching pages for the Executor Faders (Page up)
Confirm button no. 1 (the respective command appears as running text on the display)

10 Executor Fader Page Down / Button no. 2

This button has 2 functions.
Switching pages for the Executor Faders (Page down)
Confirm button no. 2 (the respective command appears as running text on the display)

11 Executor Button Page Up / Button no. 3

This button has 2 functions.
Switching pages for the Executor Buttons (Page up)
Confirm button no. 3 (the respective command appears as running text on the display)

12 Executor Button Page Down / Button no. 4

This button has 2 functions.
Switching pages for the Executor Buttons (Page down)
Confirm button no. 4 (the respective command appears as running text on the display)

13 Display

Pop-up messages will appear on the display of the TFT monitor, which have to be confirmed (as on the *grandMA*). NOTE: If these messages are not being respectively confirmed, you might not be able to continue in the process. If monitor and mouse are being connected, you can also confirm the messages with these tools.

14 Power Supply

➡ **1.5.5 Battery**

13.2 General Instructions

13.2.1 Differences between Replay Unit and the *grandMA* or *grandMA* light

The Software is identical for all units. But only 1 external monitor can be connected. The UPS Function as well as the 2048/4096 channels are being fully supported as on the *grandMA* or *grandMA* light.

Connectors for external keyboard, mouse and monitor are located on the back of the unit (these are not included in the delivery volume).

Encoder, Trackerball, Wheel, more than 5 Executor Faders and 5 Executor Buttons as well as quite a few other buttons on the *grandMA* and *grandMA* light are not available with this unit. Nevertheless most of the functions (except for the executors) can be reached and activated via mouse.

13.2.2 Working with Mouse, Keyboard and Monitor

With these tools almost all functions of the *grandMA* can be operated on this unit also. The 3 buttons of the mouse will take on the functions of the buttons on the console. All needed buttons (such as CUE, COPY, NEXT, a.s.o.) have to be set as "Quikeys" in advance (➡ **8.2** Assigning and Activating QUIKEYS), so that they can be operated via the mouse. Values within the fixture or channel sheets can be modified with the middle mouse button. A Command Field will appear on the monitor when clicking on those fields above the (non-existing) encoders. You can operate this Command Field with the mouse also.

13.2.3 Working in Stand Alone Mode (Playback)

This means working with the Replay Unit without the use of external mouse, keyboard and monitor. In this mode you can only activate Playback via the existing elements on the front of the unit. Please note, that you will only have 5 Executor Faders and 5 Executor Buttons available. These Executors correspond with the first 5 Executors on the *grandMA* and *grandMA* light. There is no access to any of the other Executors. This becomes especially important when programming the show on the *grandMA* but "running" the show afterwards with the Replay Unit.

13.2.4 Working in True Tracking Backup Mode

The Replay Unit can be run as "Slave" or as "Master" in the so-called "True Tracking Backup Mode". ➡ **14** True Tracking Backup and Playback on *grandMA* consoles. In this mode, the "Slave" can not be accessed directly; this is being achieved via the "Master".

13.2.5 Working in True Tracking Backup Mode with the "Offline Editor" as Master

The Offline Editor can be operated as Master together with the Replay Unit (Slave) in Full Tracking Backup Mode. This offers special advantages as the Offline Editor can for example show more monitors of the *grandMA* ➡ **14** True Tracking Backup and Playback on *grandMA* consoles. In this mode, the Slave can not be accessed directly; this is being done via the Master (Offline Editor).

13.3 Specification and Technical Data

13.3.1 Integrated Harddisk and Diskdrive

The harddisk does not only save a backup for the operating system, but leaves enough space for countless lightshows with hundreds of cue lists. Programmes can also be saved on disk for archive purposes or transfer of shows to other consoles. It also enables a fast updating of the software, which can be downloaded from the MA Homepage (www.malighting.de) on the internet.

13.3.2 Ethernet and other Options

In addition to the 4 DMX output ports the hardware of the grandMA replay unit is designed to transmit bigger numbers of channels via Ethernet. ESTA is currently working on a standard protocol for this form of transmission, which will guarantee a compatibility between units of different manufacturers, similar to the DMX norm. In addition to DMX input, Sound, SMPTE timecode, it offers a printer port and a RS232 interface for faster communication with any kinds of peripheral units.

13.3.3 System Maintenance and Software Updates

The software of the grandMA family is in a process of constant expansion and improvement. Due to the control via menus and display softkeys it is possible to realise the feedback of our customers and technical advances in our software updates. The hardware is only the basis and offers sufficient capacity to guarantee that its owner will always participate in the fascinating technical developments.

13.3.4 Peripherals

In order not to unnecessarily reduce the speed of the grandMA electronics, we left out the graphic show simulation on the display on purpose; this effect can be easily realised with all currently available peripherals. Other peripheral units, such as a wireless remote control, are still in the development process.

13.3.5 Capacity:

- *grandMA* replay unit controls 2048 channels, 4096 channels as option via ethernet (dimmers and attributes of 8 or 16 bit) with softpatch to 4096 DMX addresses.
- A freely configurable monitor offers flexible operation and precise adaptation to any individual working mode.
- Playback works on the basis of dipless crossfade either in Tracking or Non-Tracking mode.
- The internal harddisk stands for virtually unlimited storage capacity of presets, memories, cues and effects.

13.3.6 Front Panel Layout

- 5 Faders as Executor-, Effect or Group-Faders, each with 3 directly assigned buttons.
- 5 Executor Buttons for direct retrieval of Sequences, Chases and other functions.

13.3.7 Setup Menu and Start Configuration

- Basic configuration available on harddisk.
- Lamptype library with more than 280 multifunctional fixtures.
- All fixtures and channels can be named individually.
- Free Softpatch with MIN, MAX and INVERT to four DMX lines.
- Definition of new lamptypes on screen.

13.3.8 Display of output and data entry

- Numeric dimmer channel listing.
- Channel fader symbols.
- Fixture parameter spreadsheets for status report on moving lights and dimmers.
- Different additional options available.

13.3.9 Selection and Data Input

- Selection via Group Buttons with Mouse.
- Hold and Move Mode with middle mouse button.
- Align option for proportional change of any group of values.
- Preset softkeys for the scan features.
- Buttons can be freely moved within the window.
- Presets grouped together for 10 different functions.
- Buttons of different preset groups with different colours.
- Free assignment of channels to be controlled in which preset.
- Direct access even during Playback.

13.3.10 Automatic effect generator

- A number of complex effects applicable to any channel.
- Library of all different movements.

13.3.11 Store Options

- Single cues, chase effects, sequences or effects.
- Selective programming for LTP and tracking mode.
- Basic fade times for fading channels and basic delay for switching parameters.
- Optional individual fade and delay for every single channel.
- Overwrite, Merge, Insert and Add-on option.
- Cue Lists in Tracking or Non-Tracking Mode.
- Optionally insert in Cue Only Mode.

13.3.12 Playback Options

- Free assignment between Program Pool and Playback faders or Playback buttons.
- Playback via fader or GO-button with stored timings.
- Chaser effects with Auto Run, Audio or manual X-Fade.
- Auto Loop / Single / Reverse / Bounce / Random.
- Sequence with individual timings per step.
- Go button mode / Auto Timed / Sound.
- Steps can include loops with counter or timer.

13.3.13 Executor Faders and Buttons

- Executor faders and buttons with multiple assignment options.
- Working mode of faders and buttons can be freely assigned.
- Optionally assignment of several executors for one single cue list.
- A block of special function buttons can be applied to any executor.

13.3.14 Fader working modes

- Brightness Master in HTP or LTP Mode.
- Manual X-Fade.
- Speed, Fade Time, Rate for chaser and sequences.

13.3.15 Button working modes

- ON/OFF, GO+, GO-, Pause, Flash up and Flash down.
- Fast GO and GO- (<<< and >>>) without fades.

13.3.16 Output Listings and Cuelist Protocols

- Infading or outfading values of main sequence is marked in different colours in the channel list.
- Lists of sequences including names of steps and times.
- Parameter modifications directly in the spreadsheet.

13.3.17 Overwriting a program sequence

- Constant access to all effects and channels.
- CLEAR and RELEASE functions.
- UPDATE function for fast correction of programs.
- EDIT function for direct modification of playback parameters.

13.3.18 Adjustment of Hardware

- Software Equalizer for Audio Input.
- Preselection of certain settings (Defaults).
- Free grouping of functions for selective programming.
- Preselection of save mode, times and the standard operation of playback functions.

13.3.19 Connectivity

- 4 DMX 512/1990 Output Lines via 5-pin XLR Sockets.
- DMX Input with 5-pin XLR Socket and DMX Thru.
- Audio Input Line for Mono Audio Signals >20 mV with 6,3mm socket.
- SMPTE Timecode Entry for LTC Timecode >200 mV with 6,3mm socket.
- MIDI Interface with IN/OUT/THRU.
- External control input for direct voltage signals via 25-pin SUB D socket.
- 2 SVGA Output Lines for one colour monitor and a service monitor via 15-pin sockets.
- Parallel printer port Centronic via 25-pin SUB-D socket.
- Ethernet Interface for networking (Backup), DMX-transmission and Remote Control with RJ45-socket (10Base-T) according IEEE 802.4.
- 2 serial interfaces RS-232C for future extensions (9-pin SUB-D sockets).
- Connections for external Keyboard (Mini-D, PS2-Type) and Mouse (Mini-D, PS2-Type).
- Power Supply via IEC/CEE 22 Inlet Mains Supply Plug (90 – 230V autoselecting).

13.3.20 Operating system

- Operating system for industrial applications named VXWORKS (no DOS, no WINDOWS).
- Fast cold boot time (less than 60 sec).
- Software update via download from Internet.
- Off-Line Editor available.

13.3.21 Hardware

- Pentium Processor with min. 266 MHz Processor Speed and 64 MByte RAM.
- 12 MByte non-volatile Flash Disk for Operating System, System Software and Installation Data.
- Built-in Hard Disk for Show Data, Library, etc..
- Integrated 3.5" Floppy Drive for easy software updating and external storage of Show Data.
- Reset Buttons on front and rear housing.
- Built-in UPS (Un-interruptable Power Supply) to withstand main power failures up to 10 minutes.
- Professional protection against electromagnetic interference in compliance with all relevant European EMC regulations.

13.3.22 Weight and Dimensions

- Robust Steel Housing (485 x 430 x 130 mm).
- Weight: 11 kg

14 True Tracking Backup and Playback on *grandMA* consoles

14.1 Why using a backup system?

Anytime the *grandMA* or another member of the *grandMA* family is running a show it already provides a maximum level of stability in operation based on its unique hardware concept and the built-in UPS power supply. For applications like big theatre shows, live broadcasting or larger touring events even more security is required.

On other systems this is very often achieved by a second console loaded with the same show. This second desk ("backup system") is then manually tracked to take over control whenever the main system fails. Sometimes both consoles may be linked together via MIDI, MIDI Show Control or any other serial signal to perform a "playback tracking" which keeps both systems on the same cue. In a backup situation only the DMX-outlets need to be cross-switched.

The *grandMA* now offers a complete new concept of show backup for moving light controllers.

14.2 grandMA with show backup

As the DMX signal distribution via EtherNet has recently been implemented to all *grandMA* systems the latest software release brings full backup capability via EtherNet.

14.2.1 Backup capabilities via EtherNet

The Backup may be used to combine either any of the two *grandMA* consoles or a *grandMA* Replay Unit to a master/slave configuration. The slave console (or replay unit) tracks all operations of the master console (or replay unit) and may take over control at any time when the master does not respond any more or when the connection is broken manually.

14.2.2 Synchronising show files

When a master/slave connection is established first time the slave (backup system) reloads all show data from the master's harddrive and stores them onto its own internal drive. When for whatever reason the master fails, the slave keeps a copy of the latest show file itself. So there is no need to reload showfiles manually or via floppy disks. If the slave already is holding a showfile of the same name it saves this file as backup file before storing the show received from the master.

14.2.3 Tracking the console status

Once the *grandMA* tracking backup is up and running all operations on the master are tracked to the slave for parallel execution. During a valid connection (as long as the synchronisation with the master is established) the slave console follows the master but can not be controlled locally. So all key presses, fader movements and screen touches on the slave are ignored. Vice versa the slave only executes commands from the master as long the master (=main system) is up and running. In case of a master being disconnected, crashed by faulty hardware or stuck in a unreported software problem the slave will not get into this invalid condition, too.

Taking all these feature together *grandMA* performs a real "True Tracking Backup" without any compromise and with maximum security during all shows.

14.2.4 When using the True Tracking Backup live?

The *grandMA* True Tracking Backup system is mainly designed to protect any kind of live coverage and critical show conditions. Plotting shows and lighting rehearsals are still better protected by saving show files more often (do this by an enabled "Autosave" or a double-click on the BACKUP key).

One big advantage of a synchronisation via EtherNet is the possible combination with DMX-EtherNet distribution (using the currently installed ArtNet protocol). Both *grandMA* master and slave console can be connected on the same network together with an Artistic Licence DMX-Node so there will be no need to change over the DMX-signals from main to backup system in case of an emergency.

As long as a master/slave connection is established within a network only the *grandMA* master actively transmits DMX-data via the ArtNet protocol, the slave ignores the ArtNet settings. Once a slave is set to solo mode it will immediately enable the ArtNet protocol and start transmitting DMX-data.
All internal DMX-ports on the consoles are activated at any time.

14.3 Setting up a True Tracking Backup system

For any kind of True Tracking Backup configuration within the *grandMA* family there is no need to join consoles of the same type or DMX channel count together. The *grandMA* software is most flexible and will "correct" possible difference in the actual hardware for you.

14.3.1 Connecting consoles of different types

The master console always demands the slave(s) to behave like the master hardware. This means a "big" *grandMA* master forces a *grandMA* light slave to be a "big" *grandMA* temporarily as well which results in phantom executor faders and buttons as the *grandMA* light (or *grandMA* replay unit) only has a reduced hardware. Switching executor pages will then renumber the executors as given by the first executor on the master console.

When the connection is either manually or automatically (by a user-definable timeout) broken the slave console can be switched to solo mode with maintaining the setup and configuration of the "lost" master. For example, a *grandMA* master connected to a *grandMA* light slave will force the "light" to operate like a *grandMA*, even when the connection is lost and the *grandMA* light is forced to solo mode.

The table shows what master/slave connections are possible and how many and which executor faders and buttons are available on the slave during Tracking Backup and in solo mode afterwards.

Master Console	Executor		Slave Console	Executor	
	Faders	Buttons		Faders	Buttons
grandMA	1-20	21-60	*grandMA*	1-20	21-60
grandMA	1-20	21-60	*grandMA* light + ultra-light	1-10	21-40
grandMA	1-20	21-60	*grandMA* replay unit	1-5	21-25
grandMA light + ultra-light	1-10	11-30	*grandMA*	1-10	11-30
grandMA light + ultra-light	1-10	11-30	*grandMA* light + ultra-light	1-10	11-30
grandMA light + ultra-light	1-10	11-30	*grandMA* replay unit	1-5	11-15
grandMA replay unit	1-5	6-10	*grandMA*	1-5	6-10
grandMA replay unit	1-5	6-10	*grandMA* light + ultra-light	1-5	6-10
grandMA replay unit	1-5	6-10	*grandMA* replay unit	1-5	6-10

Please note that the slave's assignment of executor faders and buttons restores to the hardware default after the console is once re-booted.

14.3.2 Connecting consoles with different DMX channel count

In a True Tracking Backup system the DMX channel count of the master console demands a temporary update or downgrade of the connected *grandMA* slave automatically. If a 4096 channel master is connected to a 2048 channel slave the *grandMA* slave will take over the 4096 channels and process them in all conditions even when the back connection is broken nevertheless what original channel count is installed.

Rebooting the slave will restore the installed channel count immediately. In a True Tracking Backup situation where the master is defective this may cause a loss of show data as only DMX channels 1 to 2048 are processed on "smaller" 2048 channel systems. Therefore please make sure that the channel upgrade is being implemented on the slave.

14.3.3 Using a PC as master console

Though the *grandMA* Offline Editor software cannot be used to actively control DMX-channels as the ArtNet protocol is permanently disabled it still can be used in a master/slave connection with "real" *grandMA* consoles.

Because of the limitations of the PC hardware in combination with Windows® operation systems the *grandMA* Offline Editor must be seen as "weakest" part of the EtherNet chain therefore it may only be operated as master console.

You may use this setup with a PC as master to easily transfer show file data to other *grandMA* consoles (whatever type they are), especially when they are used on a distributed network.

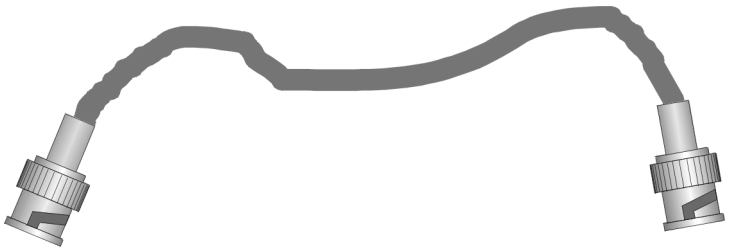
14.4 Connecting consoles for a True Tracking Backup system

Any True Tracking Backup configuration with *grandMA* components may only be connected via a EtherNet communications network. The *grandMA* consoles currently support two different hardware types of transmission media.

14.4.1 10 Base-2 EtherNet

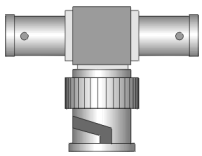
EtherNet with 10 Base-2 connection media (also known as "Cheapnet") has lost its importance in todays networking technology. Nevertheless as 10 Base-2 systems are very easy to configure and they do not require additional networking nodes or hubs they might be used to easily link two or more *grandMA* consoles. As the built-in EtherNet card of the *grandMA* console autosenses the used connection media there is no need to configure the console's hardware at any time.

The connection cable used for 10 Base-2 EtherNet is a 75 ohm coaxial cable (RG-58U) with male BNC connectors on both ends. The maximum cable run is up to 180 metres from end-to-end.



BNC cable to be used for 10 Base-2

All connections to any kind of networking units (like consoles, PCs or Hubs) require the use of a "T"-connector", which has to be connected to the BNC output of the console. Extension cords are not permitted.

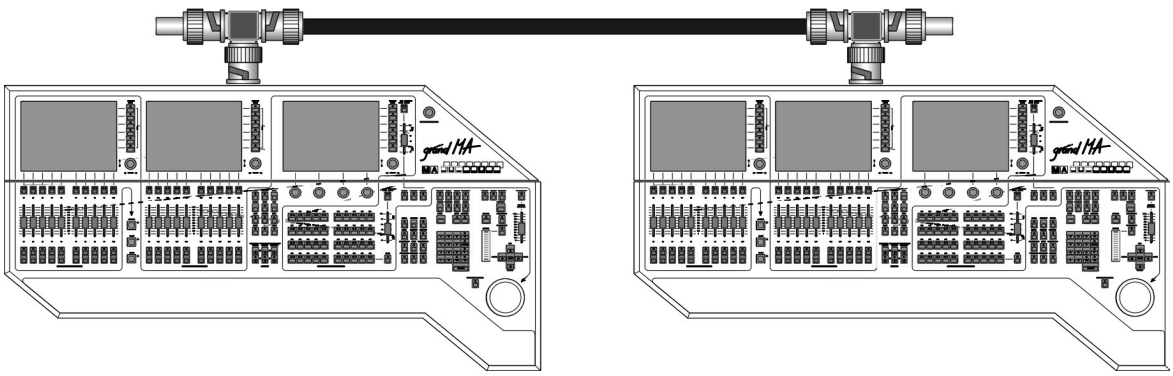


"T"-connector to be used with10 Base-2 network nodes

Any connection cable used for 10 Base-2 EtherNet has to be terminated on both ends with 75 ohm resistors. If these resistors are disconnected or of the wrong value no network operation will be possible.

Line termination on 10 Base-2 network

10 Base-2 EtherNet can be used for *grandMA* master/slave connections when no ArtNet DMX-Nodes or other distribution equipment is planned to be used. For longer cable runs or distributed networks 10 Base-2 EtherNet is not recommended any more.

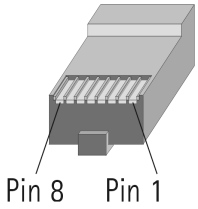


Two grandMA consoles connected on a 10 Base-2 network

14.4.2 10 Base-T EtherNet

The most common EtherNet connection is the "twisted pair" link using 10 Base-T EtherNet. Hereby a peer-to-peer connection is established by minimum 4-wire cable connection at a maximum length of 100 metres. The cable is always equipped with 8-pole RJ-45 crimp-connectors.

"Twisted pair" cable to be used for 10 Base-T with RJ-45 connectors



Pin No.	Colour of Wire (PDS/258A)	10BASE-T Signal
1	T2 white, orange stripes	Data transmit +
2	R2 orange	Data transmit -
3	T3 white, green stripes	Data receive +
4	R1 blue	*Not used*
5	T1 white, blue stripes	*Not used*
6	R3 green	Data receive -
7	T4 white, brown stripes	*Not used*
8	R4 brown	*Not used*

Pin numbers on RJ-45 connector and 10 Base-T standard signal assignment

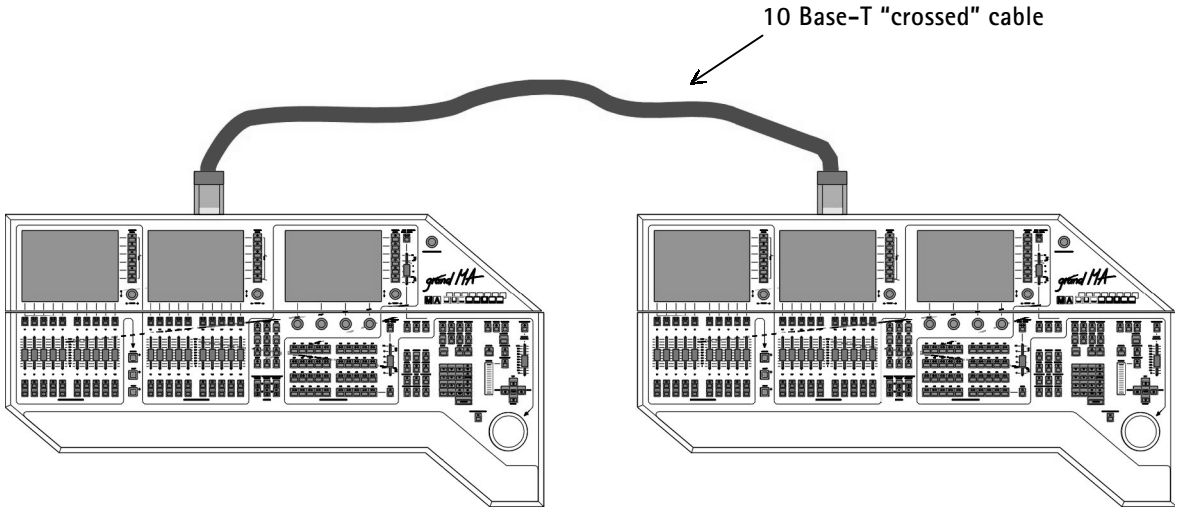
As 10 Base-T EtherNet always requires an EtherNet hub to distribute the signal (connections from console to console go via a hub) a useful application will be any network where more than two consoles or consoles with additional equipment (such as ArtNet DMX-Nodes) are proposed.

For a simple peer-to-peer connection between two consoles only a "crossed" 4-wire cable may be used.

	Master Console End			Slave Console End	
Pin No.	Colour of Wire	10BASE-T Signal		Colour of Wire	10BASE-T Signal
1	T2 white, orange stripes	Data transmit +		white, green stripes	Data transmit +
2	R2 orange	Data transmit -		green	Data transmit -
3	T3 white, green stripes	Data receive +		white, orange stripes	Data receive +
4		*Not used*			*Not used*
5		*Not used*			*Not used*
6	R3 green	Data receive -		orange	Data receive -
7		*Not used*			*Not used*
8		*Not used*			*Not used*

"Crossed" cable to be used for 10 Base-T peer-to-peer connections

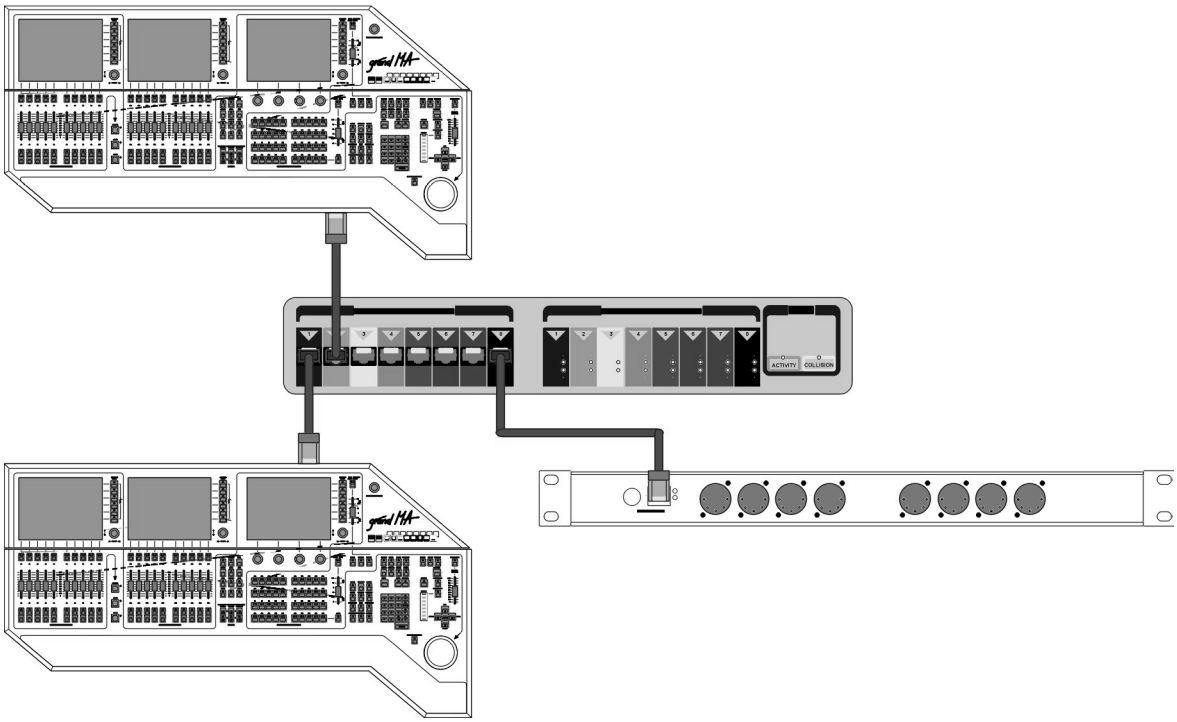
Using a "crossed" 10 Base-T cable will allow a direct console-to-console connection but no additional components can be added to this connection type later on.



grandMA Master/slave configuration with 10 Base-T "crossed" cable

The console(s) can only work on one transceiver type at a time - when the 10 Base-2 port is in use anything connected to the 10 Base-T outlet is ignored and vice versa. If you want to connect more consoles at one time or the use of a ArtNet DMX-Node is required a 10 Base-T EtherNet-hub must be installed.
Also for security reason on longer cable runs or branched wiring a 10 Base-T hub is strongly recommended (like a DMX-booster on larger DMX-networks).

The following example shows a network configuration with two identical consoles and an ArtNet DMX-Node for DMX changeover and distribution. All components are star-wired from a central EtherNet hub using standard 10 Base-T cabling.



grandMA Master/slave configuration with 10 Base-T Hub and ArtNet DMX-Node

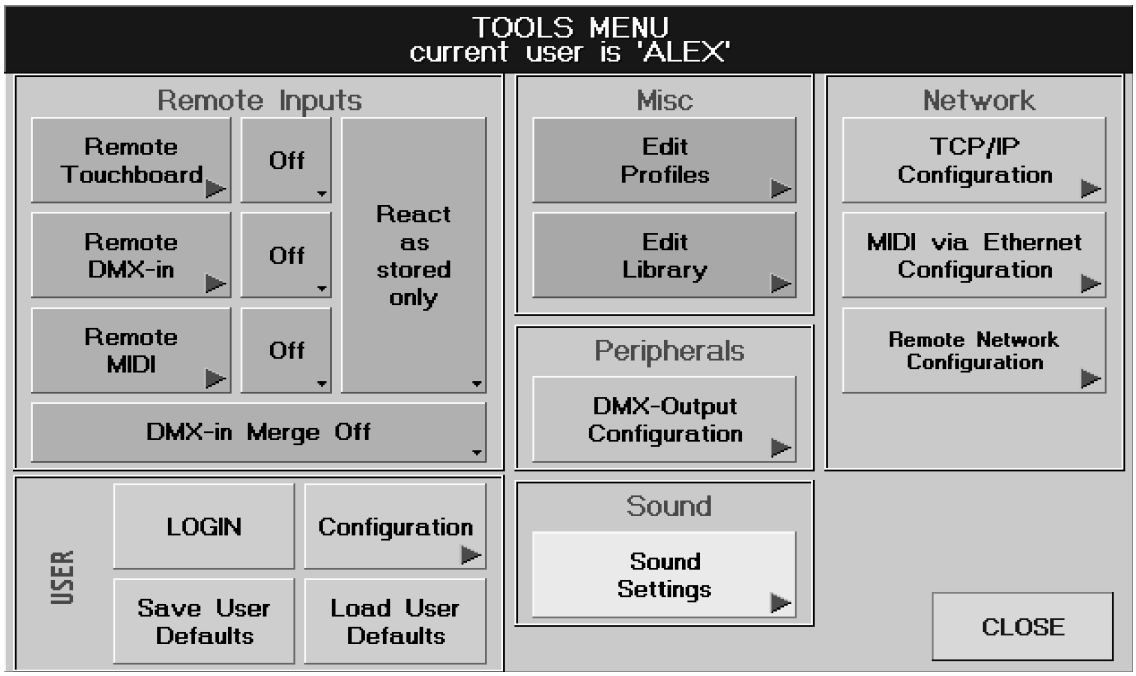
14.5 Console configuration for True Tracking Backup or Playback

All the necessary configuration for the set-up of a master/slave connection is part of the *grandMA* operational software and can be done from the console's surface. No change or adjustment to the hardware is required on any of our consoles.

Please note for True Tracking Backup: If you have not yet loaded your final show file, now is the time to do so from the BACKUP menu. It is only required to load the show on the master console, the slave's show data is reloaded anyway. If your slave console holds show data which has not been saved to the harddrive yet, please do so now.

14.5.1 Setting the console's operation mode

Open the tools menu with the dedicated function key labelled "TOOLS".



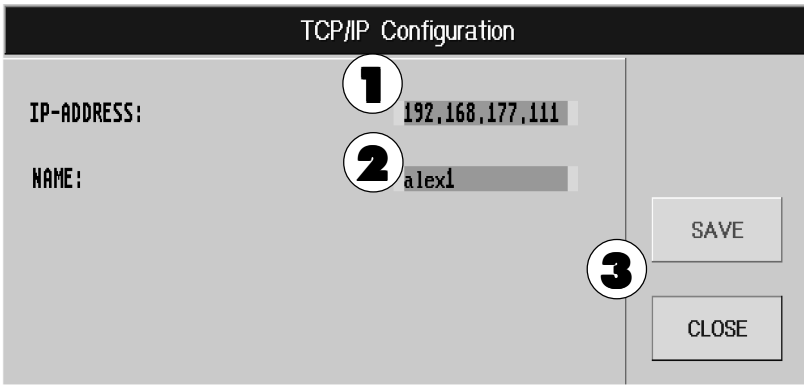
If you are using ArtNet protocol to transmit DMX-data on a network make sure all the Artistic Licence DMX-Nodes are properly configured and connected to the network now.

You will find all necessary configuration tools in the "DMX-Output Configuration" menu activated by the above displayed softkey. ➡ **2.7** DMX Output and Ethernet Configuration

14.5.2 Configuration of TCP/IP

The necessary connection set-up for the True Tracking Backup Mode or Playback Mode can be found in the TCP/IP Configuration menu which is activated by the "TCP/IP Configuration" softkey within the Tools menu.

1 You cannot use the same IP-address on different consoles connected to the network. Change the individual IP-address of each console to a unique value within your network. Make sure that the first three numbers (here: 192, 168 and 177) are the same for all consoles.

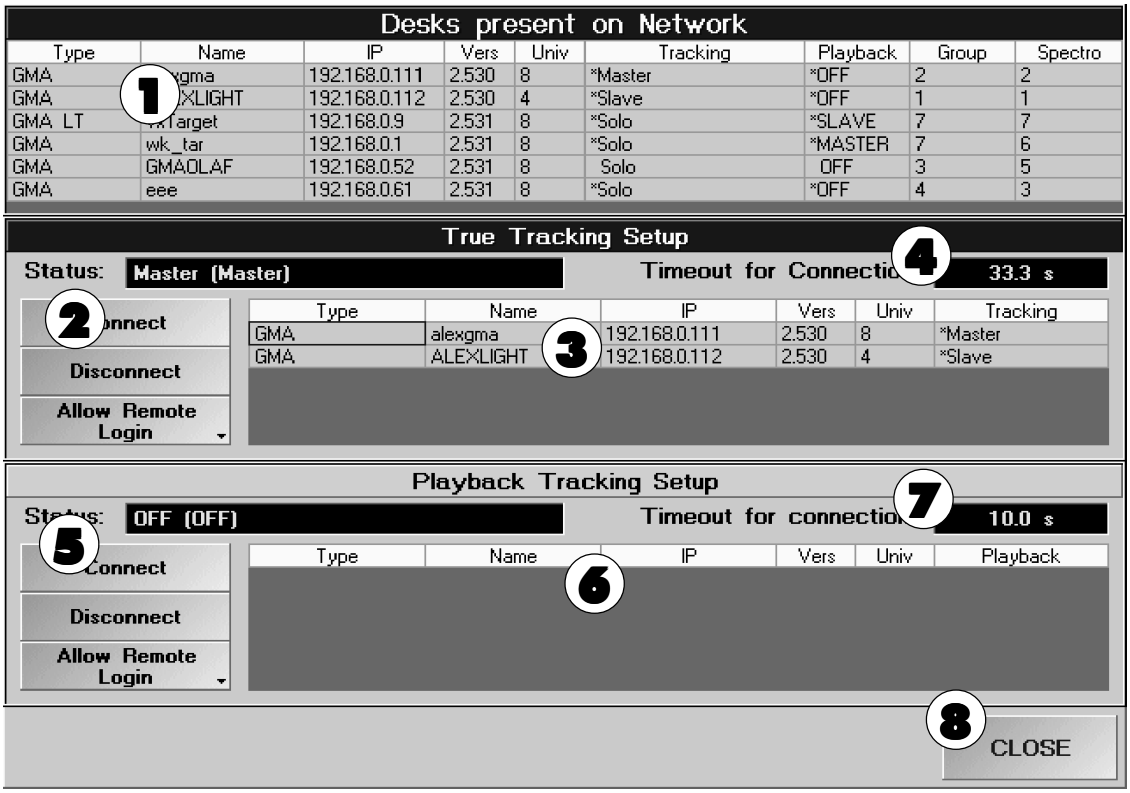


2 Each console must have a name which could be the same for some consoles (not recommended).

3 You can save your current settings with the SAVE button. CLOSE will close this window.

14.5.3 Configuring Master/Slave-Mode for True Tracking or Playback

By pressing the button „Remote Network Configuration" in the TOOLS Menu, the following menu will open.



1 The chart shows all *grandMA* consoles with names and IP-Addresses, that are available in this network. The column UNIV provides information for each console, if there are 4 or 8 DMX-outputs available on the respective console.

The „TTB-Status" column indicates the mode (Solo, Master or Slave) of True Tracking Backup, which the console is currently using. If you find an asterix in front of the indication, the console can be addressed as either Master or Slave. If there is no asterix, this console is locked. (Unlock; see item 2 - Button ALLOW/REJECT REMOTE LOGIN).

The „PB-Status" column indicates the mode (Solo, Master or Slave) of Playback operation, which the console is currently using. If you find an asterix in front of the indication, the console can be addressed as Master or Slave. If there is no asterix, the console is locked (Unlock; see item 4 - Button ALLOW/REJECT REMOTE LOGIN).

True Tracking Setup

2 On the right side of Status indicates, if this console operates in a True Tracking Backup connection as the Master or the Slave. If SOLO is indicated, the console is working in Stand-Alone mode.

You can either set up or cancel a MASTER-SLAVE connection using the CONNECT/DISCONNECT button. See next page.

Switching the button function by shortly pressing on it:

ALLOW REMOTE LOGIN: This console can be used by another console for a True Tracking Backup connection.

REJECT REMOTE LOGIN: This console can **not** be used by another console for a True Tracking Backup connection.

3 In a True Tracking Backup connection this chart will show the two connected consoles.

4 In the cell on the right side of „Timeout for Connection": you find a time indication, after which the consoles will be switched to Stand-Alone mode, in case the connection between Master and Slave is lost. By clicking into the cell, you can enter a different time or „None".
If an error in the network or on one of the consoles is detected, the NETWORK ERROR window will open (from now on, the given time starts to run).
By pressing the ESCAPE key on the keyboard, you can switch this console to Stand-Alone mode and work with it immediately.
After the given time has elapsed, the console switches to Stand-Alone mode that still has to be confirmed by pressing the OK button. By changing the time to "0", you can switch to Stand-Alone mode much faster.

Playback Tacking Setup

5 On the right side of Status indicates, if this console operates in a Playback connection as the Master or the Slave. If OFF is indicated, the console is working in Stand-Alone mode.

You can either set up or cancel a Playback Tracking MASTER-SLAVE connection using the CONNECT/DISCONNECT button. See following pages.

Switching the function of the button by short push:

ALLOW REMOTE LOGIN: This console can be used by another console for a Playback connection.

REJECT REMOTE LOGIN: This console can **not** be used by another console for a Playback connection.

6 In a Playback connection this chart will show the two connected consoles.

7 In the cell on the right side of "Timeout for Connection", you find a time indication, after which the consoles will be switched to Stand-Alone mode, in case the connection between Master and Slave is lost. By clicking into the cell, you can enter a different time or „None".
If an error in the network or on one of the consoles is detected, the NETWORK ERROR window will open (Playback Socket).
In this window, you see the time frame in which the console will automatically switch to Stand-Alone mode. After the given time has elapsed, the console/s will switch to Stand-Alone mode that still has to be confirmed by pressing the OK button. By changing the time to "0", you can switch to Stand-Alone mode much faster.
By pressing the "Terminate Connection" button, you can switch this console to Stand-Alone mode and work with it immediately.

8 Will close the window.

14.5.4 Setting up a True Tracking Backup Connection

This window will open if you go to True Tracking Backup and press the CONNECT button.

Pressing the button MASTER will start this console as the Master and the other one as the Slave. If you press SLAVE, this console will be started as Slave and the other one as Master.

After you have made your choice for MASTER or SLAVE, this window will open, where you can now select the console to be connected.

After the console has been selected, both consoles will reboot.

After rebooting, the Master console will start searching for the slave system (just as the slave system will start searching for the Master). Following that, the current show will be transfered from the Master console to the Slave console.

As soon as the connection has been fully set up, you can start with the normal operation of the Master console. The Slave console will simultaneously execute all the steps (even fader movements).

The True Tracking Backup Connection remains active, as long as it is not:

- manually interrupted by taking off the EtherNet cable (or by deactivation of the EtherNet Hubs).
- automatically stopped due to a recognised communication problem.
- canceled due to a hardware problem either at the Master or the Slave.

The slave will ask in any case though for a confirmation (by pushing the "Escape" button on the PC-keyboard), before it will take up its task to work in Stand-Alone mode. For this reason a Tracking Backup System should always have a PC-keyboard connected to the Slave.

Disconnecting a True Tracking Backup Connection

If you go to True Tracking Backup and press the DISCONNECT button in the PROTOCOL-CONFIGURATION menu, the connection will be terminated. The Master console switches immediately to SOLO mode and can be used the normal way.

On the Slave console you will see a window called TRUE TRACKING BACKUP showing the following message: LOGOUT INITIATED BY MASTER. When pushing the OK button, this console will switch to SOLO mode and can be used the normal way.

Using consoles in external networks

Do not try to connect Tracking Backup consoles with computers such as office PCs or network printers, as this would slow down the connection and the Tracking Backup might lose the synchronisation.

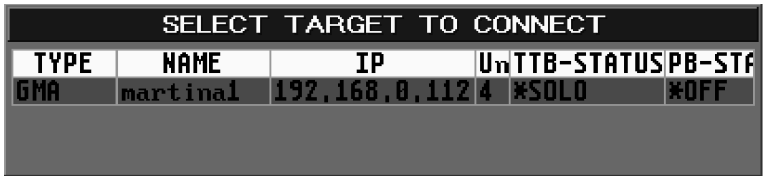
14.5.7 Setting up a Playback Connection

If during a Playback connection the Master console executes Playback commands, the slave console will do the same executor button- or fader movements as the master. The active Executors will only be displayed on the currently active page of the Slave console (but will be executed on all other pages). Using GO commands, not only GO+ and GO- are called up, but also GOTO CUE X (Number of the Cue). All Playback commands (FIX, SELECT, OFF, TEMP, TOP, ON, <<<, LEARN, >>>, GO-, Pause and GO) will be executed. The switching over of pages will **not** be executed on the Slave console. If on the Master console, executors are assigned via the ASSIGN menu, this will also happen on the Slave console.

This window will open if you go to Playback and press the CONNECT button.

By pressing the MASTER button, this console will be started as Master and the other one as Slave. By pressing the SLAVE button, this console will be started as Slave and the other one as Master.

After you have made your choice for either MASTER or SLAVE, this window will open where you can now select the console to be connected.



As soon as you have selected the console, the connection will be set up and can be used.

As soon as the connection has been fully set up, you can start with the normal operation of the Master console. The Slave console will simultaneously do all the executor movements (even fader movements).

The Playback Connection remains active as long as it is not:

- manually interrupted by taking off the EtherNet cable (or by deactivation of the EtherNet Hubs).
- automatically stopped due to a recognised communication problem.
- canceled due to a hardware problem at either the Master or the slave console.

If the connection is interrupted, the "NETWORK ERROR" window will open. The given time (Timeout for Connection), in which the connection can be verified, will run. After this time has elapsed, the connection will be terminated automatically. By pressing the "Terminate Connection" button, the connection can be terminated immediately.

While the connection is interrupted, you can work with both consoles in the normal way.

Disconnecting a Playback Connection

If you go to Playback in the PROTOCOL-CONFIGURATION menu and press the DISCONNECT button, a window will open, where you can terminate the connection by clicking on the other console. Both consoles will switch to Solo mode and can be used again the normal way.

Using consoles in external networks

Do not try to connect Playback systems of grandMA consoles with other computers such as office PCs or network printers, as this would slow down the connection and the Playback might lose the synchronisation.

True Tracking and Playback simultaneously

To make a True Tracking Backup of a Playback connection, you have to set up the Playback connection to the Master console first. After that you can install the True Tracking Backup connection from the Master resp. from the Slave Playback consoles to the corresponding True Tracking Backup Slaves..

We recommend you to get more informtions by the MA Hotline before construction of complex networks (see below).

15 Fixture Library

Manufacturer	Fixture Name	No. of Channels
	DIMMER 8 BIT	1
	DIMMER 16 BIT	2
	DIMMER 16 BIT FIne first	2
	SCRxx-01	1
	SCDxx-01	2
	SRDxx-02	2
ABSTRACT	Galactic Moon	2
	Futurescan	4
	Scenesettece	2
ADB (BBA)	Ingenio COLOUR Ch.	11
AMPTOWN	ACC Posi Spot	4
	Contr.PML MK2	12
	Contr.PML ZOOM	23
	Contr.WL HX	7
	Contr.WL HX TV	10
	Contr.WL HX Sq	15
	Contr.WL HP	10
	Contr.WL HP TV	12
	Contr.WL HP Sq	16
B+K	Varytec	5
CAMELEON	TELESCAN MARK I	8
	TELESCAN MARK IV	19
CLAY PAKY	Miniscan 300	4
	Miniscan HPE	7
	Goldenscan2	6
	Goldenscan3 6ch	6
	Goldenscan3 8ch	8
	Goldenscan HPE	12
	Superscan 12ch	12
	Superscan MRG	12
	Superscan Zoom 12ch	12
	Superscan Zoom 16ch	16
	Stage Scan 17ch	17
	Stage Light 300	10
	Stage Color 300	10
	Stage Color 575	14
	Stage Color 1000	11
	Stage Color 1200	14
	Stage Zoom 19ch	19
	Shadow	4
	Tigerscan	6
	Pinscan	3
	Bazuka	6
	Polycolor	6
	Tiger MRG	4
	Tiger COLOUR Changer	3
	Combicolor	4
	Tornado	8
COEF	Performance 200	6
	Performance1-3 6Ch.	6
	Performance3 9Ch.	9
	Performance4 10Ch.	10
	Coef 1200 Disco	8
	COLOR SHOW 200	5
	MP 250 Optic HR+	9
	MP 250 FRESNEL HR+	9
COEMAR	Microscan 3	8
	Samurai	8
	MINI ULTRA 200/250	6
	MINI ULTRA 2	8
	NAT MM 1200 DX	10
	NAT MM 1200 PR 13Ch	13
	NAT MM 1200 ZOOM 20C	20
	MM 2500 Zoom	20
	Nat TM 1200 DX	12
	Nat TM 1200 DXP	14
	Nat TM 1200 20ch	20
COEMAR	Nat TM 1200 Power	20
	Nat TM 4000	20
	Nat TM 2500 21Ch	21
	CF 1200 Hard Edge	20
	CF 1200 Spot	13
	PC 1000 CC	8
	Pchmi	9
	CF6 (TAS)	12
	CF7 Hard Edge	20
	CF7 Zoom Wash	13
DHA	DHA Light Curtain	2
	DHA P Light Curtain	3
	DHA Network	1
FAL	FAL 2000	7
	FAL 2500 XL/XLD	11
	FAL 2500 XLDX	14
	Roulette 575/1200	8
	Proscan II HR	14
	Proscan X HR	13
	Promo 2/3	6
	Three-Sixty	8
	Three-Sixty2	10
FLY	FOS 3	12
	FOS 4	12
	Palette	5
FUTURE-LIGHT	Miracle	4
	CC-200	4
	RT-150	4
	SC-330/370	4
	H-150	4
	Future H250	4
	Promotion Scan HR	11
	Genesis	8
	Voyager	8
	Duke 1200	8
	Advert Scan HR	11
	SC-250	6
	SC-530/570	10
	SC-740	13
	SC-780	16
	SC-940/980	16
	MH-640	15
	MH-840	16
	MH 660 Spot	16
	MH 860 Spot	16
GENIUS	Omega2	10
GLP	Mini Star Tec 6Ch.	6
	Mighty Scan	6
	MAX	8
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	Cyber m1 Litho	20
	Cyberlight m1	20
	Cyberlight m2	20
	Cyber m2 Litho	20
	Studiocolor	16

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	Studio Spot 575	24
	Studio Spot CMY	24
	Studio Beam PC V1.0	16
	Studio Spot 250	18
	Color Pro Std+HX	6
	Color Pro Enh+HX	9
	Technopro HR 12ch	12
	Trackspot mainlight	5
	Technoray hR 14ch	14
	Dataflash	3
J.B.	Varyscan 3 SP+ 6CH.	6
	Varyscan 3 SP+ 8CH.	8
	Varyscan 3 700	13
	Varyscan 4	8
	Varyscan 4 EV	11
	Varyscan 5 MV	22
	Varyscan 6 spot	12
	Varycolor 6 wash	12
	Varycolor	6
JEM	JEM Hydrosonic 2000	2
LAMPO	Sintesi+Super	6
	Columbus 1200 AF	10
LE MAITRE	G300 Smoke	2
LICHTTECHNIK	Motor Yoke 300,330	17
LITEBEAM	SWING I	6
	Chandra I	7
	SWING II HR	14
	Chandra II HR	14
LSD	Colormag	1
	Molemag	1
LYTE QUEST	MotorHead	5
MAD LIGHTING	Qstar	4
	Star511	5
	Scan411	4
	IMP407	4
	Qscan	5
	Scan611	6
MARTIN	Roboscan 218 m3 HR	9
	Roboscan 518 m3 HR	9
	Roboscan 812 7ch	7
	Robo 918 m4	16
	Robo 1020	12
	Robo 1220	16
	Imagescan m2	9
	Robo 1220 XR m4 HR	15
	Robo 1220 cmyr m4	19
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	Exterior 9ch	9
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	Exterior 5ch	5
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	COLOUR Fader DIMMER	4
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	MS-575	16
	Prince 6ch	6
	SuperPrince 10ch	10
	Infinity HR 12ch.	12
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	Newton	5
	COLOUR Lab 250	6
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SLS	Panscan 3 Junior	5
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SPACE CANNON	IreosPro+art+ibi	15
	Easy	10
	Focus	8
	Target + Devil	8
STARLITE	Starlite 2G HR	9
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	Live Pro 1200 FROST	16
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	Stratos CMY R.Gobo	14
	Stratos CMY Iris	14
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	Predator	6
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	Vl5 m4 v5.1	14
	Vl5 Arc m3 v5.1	10
	Vl5 Arc m4 v5.1	14
	Vl6 m3 v5.1	10
	Vl6 m4 v5.1	14
	Vl6 m5 v5.1	11
	Vl6 m6 v5.1	15
	Vl6B m5 v5.1	14
	Vl6B m6 v5.1	18
	Vl7 m7 v5.1	17
	Vl7 m8 v5.1	20
	Vl7B m9 v5.1	24
	Vl7B m10 v5.1	27
	Vl2201 8bit Std.	12
	Vl2201 16bit Std.	14
	Vl2201 8bit Enhc	15
	Vl2201 16bit Enhc	17
	Vl24xx 8bit Std.	10
	Vl24xx 16bit Std.	12
	Vl24xx 8bit Enhc	13
	Vl24xx 16bit Enhc	15
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	MN 600 Wash	14
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Declaration of Conformity according to directives 89/336 EWG and 92/31 EWG

Manufacturer's name: MA Lighting Technology GmbH

Manufacturer's address: Dachdeckerstraße 16
D-97297 Waldbüttelbrunn
Germany

declares that the product

Name of product: MA *grandMA*, *grandMA* light, *grandMA* ultra-light, *grandMA* RPU

Type: MA GM

complies with the following product specifications:

Safety: EN60065, EN60950

EMV (EMC): EN55103-1 (E1), EN50081-1
EN55103-2 (E2), EN50082-1

Additional information: DMX512 and analogue inputs and outputs must be shielded and the shielding must be connected to the earthing resp. to the housing of the corresponding plug.

Dipl. Ing. Michael Adenau

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<<<: 101

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